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MONEY, WEIGHTS, & MEASURES,

OF ALL NATIONS.

BY

W. A. BROWNE, M.A., LL.D.

SIXTH EDITION.

Two Shillings and Sixpence.

600068729

600068729

THE

MONEY, WEIGHTS, & MEASURES

OF THE

CHIEF COMMERCIAL NATIONS

IN THE WORLD,

WITH THE

BRITISH EQUIVALENTS.

BY

W. A. BROWNE, M.A., LL.D.

SIXTH EDITION.

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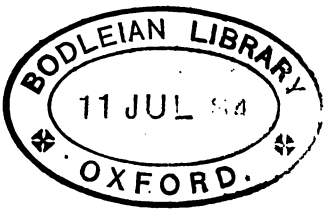

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G. HILL, STEAM PRINTER, WESTMINSTER BRIDGE ROAD.

PREFACE TO THE SIXTH EDITION.

—:o:—

I HAVE endeavoured to make this work a trustworthy source of information on the subject of Money, Weights, and Measures. Owing to changes in the currencies, and denominations of moneys of account, and exchange, and to the introduction of the Metric System of Weights and Measures in several countries, I have made many alterations, and have re-written several articles in the present Edition.

The subject of Money, Weights, and Measures is more fully treated in my larger book, entitled "The Merchant's Handbook of Money, Weights, and Measures," of which this little work is an abridgment.

W. A. B.

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MONEY.

INTRODUCTION.

MONEY or "the currency" is the standard measure of the value of commodities and the medium of exchanging them one for another. It is called a measure of value because, by it, the price of everything bought and sold is measured, and the value of future payments is regulated.

Pure gold and silver are too soft to serve as media of exchange, and for that reason they are *usually alloyed*, that is, mixed with a small proportion of harder or less valuable metals.

The phrase, "moneys of account," means the denominations and divisions of money in which accounts are kept. The moneys of account may either be identical with the current coins, or may bear definite proportions to them.

Exchange signifies the giving or receiving, in return for a sum of money in the currency of one country, an equivalent sum in the currency of another country.

The PAR OF EXCHANGE between two countries using the same metal as their standard of value is that sum of money of either country which contains an exactly equal weight of gold or silver of the same purity. It is the equivalent intrinsic value of a given unit of the currency of one country estimated in the currency of another country, both using the same metal as a standard.

The COURSE OF EXCHANGE may be defined to be the current prices of exchange, or the prices given from time to time in one country for Bills of Exchange payable in the currency of another. It is the *variable* price (estimated in the currency of one country) which is given for a *fixed* sum in the currency of another country.

THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

The money of account consists of pounds, shillings, and pence sterling.* It is as follows :—

			French value.† F.	C.
4 farthings	= 1 penny	Marked *d.* =	0·	10
12 pence	= 1 shilling	,, *s.* =	1·	25
20 shillings	= 1 pound sterling	,, £‡ =	·25	0

The system of currency in the United Kingdom consists of gold, silver, and copper coins, and of Bank Notes, exchangeable on demand at their full nominal value for gold and siver.

GOLD COINS.

The principal legal tender, and the standard of value is the sovereign of 20s., weighing 123·27447 grains Troy, and the half sovereign of 10s. the same in proportion as to weight and fineness. Its least current weight is 61·1250 grains, or 3·96083 grains, or 7·98805 grains of English standard gold. Double sovereigns, and five pound gold pieces are also authorised, but there are none of them in circulation. The double sovereign weighs 246·548 Troy grains.

The fineness of gold is expressed in *carats*. As applied to gold the term *carat* signifies the *twenty-fourth part* of any given weight of that metal or of its alloy.

The gold used in the coinage of the United Kingdom is composed of 11 parts of pure gold and one part alloy, or which is the same thing 22 (out of 24) parts of pure gold and 2 parts

---

* The Term *sterling* distinguishes the currency of Great Britain and Ireland from that of the British Colonies, and from some Continental moneys bearing the same names. *Sterling* is an abbreviation of *Easterling*, the name by which *Eastphalian* traders, the ancestors of the merchant princes of Hamburg, were known in England. Their money was of the finest quality, and hence Easterling shortened into sterling became a general term for *pure* money.

† F = Franc. C = Centimes.

‡ The letters £ s. d. (the initials of the Latin words *libræ*, *solidi*, and *denarii*) are used in accounts to denote respectively *pounds*, *shillings*, and *pence*, and are either written over or at the side of those denominations. Farthings are generally written as fractions of a penny, and are seldom considered as integers, but when they are the letter q. (the initial of the Latin *quadrantes*) is written over them. As fractions they are written as follows :—¼ = 1 farthing; ½ = 2 farthings or 1 half-penny; ¾ = 3 farthings.

of alloy, the alloy being a mixture of silver and copper, but chiefly copper. According to the old method of computing the value of the gold coinage, 40 Troy weight of gold of the standard of $\frac{11}{12}$ths fine and $\frac{1}{12}$th alloy was coined into 1869 sovereigns. A sovereign should not weigh less than 123·074 grains or more than 123·474 grains.

SILVER COINS.

The silver coins are the *crown* of 5s. weighing 436$\frac{4}{11}$ Troy grains, the *half-crown* of 2s. 6d. weighing 218$\frac{2}{11}$ grains Troy, the *florin* of 2s. weighing 174$\frac{6}{11}$ grains Troy, the *shilling* weighing 87$\frac{3}{11}$ grains Troy, or 5·65518 grains, the *sixpence* weighing 43$\frac{7}{11}$ Troy grains, the *fourpence** weighing 29$\frac{1}{11}$ Troy grains, and the *threepence*. A few *twopenny* and *penny pieces*, known as *Maundy money*, and distributed as alms by the Sovereign, are also coined, but they are not in general circulation.

The Troy pound of silver is coined into 66 shillings; and all the silver coins contain 925 parts of pure silver and 75 parts of alloy in 1000 parts.

Silver coins are a legal tender for any sum up to 40 shillings, but no more in any one payment.

BRONZE COINS.

The bronze coins are the penny, weighing 145·833 grains, the half-penny, weighing 87·500 grains, and the farthing, weighing 43·750 grains.

The bronze coins are composed of 95 parts by weight of copper to 4 of tin and 1 of zinc. Bronze coins are a legal tender to the amount of one shilling only.

BANK NOTES.

Bank of England Notes for £5, £10, £20, £50, £100, £500, and £1000. There are likewise the notes of several Banks of issue both in Ireland and Scotland, as also the provincial towns of England, varying from £1 upwards, but these

---

* These will ultimately disappear from circulation. None have been coined since 1856, and now (1882) they are being withdrawn in large quantities.

are not so freely taken except in the locality where they are issued; and in London the notes of Irish and Scotch banks are at a slight discount.

COMPARATIVE TABLE OF BRITISH, GERMAN, FRENCH, AND UNITED STATES COINS.

British Coin.	German value.		French, Belgian, Swiss, Italian, and Greek value.		United States value.	
	Reichsmarks.	*Pfennige.*	*Francs.*	*Centimes.*	*Dollars.*	*Cents.*
Sovereign	20	0	25	15	4	84
Half-sovereign	10	0	12	57	2	42
Crown (or 5 shilling piece)	5	0	6	24	1	21
Half-crown	2	50	3	12	0	60
Florin	2	0	2	51	0	48
Shilling	1	0	1	25	0	24
Sixpence	0	50	0	63	0	12
Four-pence	0	33	0	41	0	8
Three-pence	0	25	0	31	0	6
Penny	0	8	0	10	0	2
Half-penny	0	4	0	5	0	1
Farthing	0	2	0	2½	0	½

Explanation of the Course of Exchange.

The course of Exchange may be defined to be the quotation of the rates at which Bills of Exchange for sums expressed in the money of one country, can be used in paying sums expressed in the money of another country. For example, the quotation for France, Belgium, Italy, and Switzerland, indicate so many *Francs* and *Centimes*, for One Pound Sterling; the quotations for Germany mean so many *Reichsmarks* and *Pfennige*, for One Pound Sterling. The course of Exchange for Holland is quoted in *Florins* and *Stivers*, for One Pound Sterling; (20 stivers are equal to a florin, the term stiver, which is nearly obsolete, means 5 cents), but bills are always drawn in *florins* and *cents*. The exchange for the United States of America, Russia and Portugal, is quoted at a variable number of pence sterling for the *dollar* (America); *silver rouble* (Russia); and *milreies* (Portugal).

IRELAND.

In the old Irish currency the denominations of money were the same as those of the United Kingdom, given at p. 2, viz., Pounds, Shillings, and Pence; but British Sterling money is greater in intrinsic value by a twelfth part than the late old Irish currency, as is shown in the following table:—

COMPARATIVE TABLE OF BRITISH STERLING AND IRISH CURRENCIES.

British.				*Irish.*		
£	s.	d.		£	s.	d.
0	0	$\frac{1}{13}$	=	0	0	1
0	0	1	=	0	0	$1\frac{1}{13}$
0	0	3	=	0	0	$3\frac{1}{4}$
0	0	$5\frac{7}{13}$	=	0	0	6
0	0	6	=	0	0	$6\frac{1}{2}$
0	0	$11\frac{1}{13}$	=	0	1	0
0	1	0	=	0	1	1
0	18	$5\frac{7}{13}$	=	1	0	0
	0	0	=	1	1	8
92	6	$1\frac{1}{13}$	=	100	0	0
96	18	$5\frac{7}{13}$	=	105	0	0
100	0	0	=	108	6	8
105	0	0	=	118	15	0

THE CHANNEL ISLANDS.

VIZ.,

GUERNSEY, JERSEY, ALDERNEY, AND SARK.

The denominations of money are *pounds*, *shillings*, and *pence*, *Channel Island currency*. £1 sterling is reckoned equal to £1 1s. 8d. Channel Island currency.*

* In Jersey there is a copper currency of the value of 13 pence to the British Shilling.

FRANCE.

French value.		*Systematic name.*		*Approximate English value*
		1 centime	=	$\frac{1}{100}$d.
100 centimes	=	1 franc	=	9½d.

The French coinage is based upon the unit of weight, the gramme. A franc weighs 5 grammes. Silver is the standard of value. The franc in silver is equal to 9·384d. sterling, and 25 francs 57·2 centimes are the equivalent value in silver of £1 sterling. The value of the franc in gold is 9·516d. sterling, and 25 francs 22 centimes are the equivalent value in gold of £1 sterling. A kilogramme of gold is coined into 3100 francs, and a kilogramme of silver into 200 francs, or in the proportion of 15½ of silver to 1 of gold, which proportion is equivalent to 60¼d. per ounce, of silver.

GOLD COINS.

The gold coins are pieces of 100, 50, 20, 10, and 5 francs. The 20 franc piece is called a Napoleon. The gold coinage is nine-tenths fine, that is, it contains 900 parts by weight of pure gold and 100 parts of alloy.

SILVER COINS.

The silver coins are pieces of 5, 2, and 1 francs, and the ½ franc and the 20 centime piece. The 5 franc piece is nine-tenths fine, that is, it contains 900 parts by weight of pure silver and 100 parts of alloy. The 1 and 2 franc pieces and the 50 and 20 centime pieces are of the standard of 835, and are token coins only.

BRONZE COINS.

The bronze coins are pieces of 10, 5, 2, and 1 centimes, which weigh respectively 10, 5, 2, and 1 grammes.

The bronze coins in most general use are the 10 and 5 centime pieces. The 2 centime piece is seldom met with, and the 1 centime piece is still more uncommon.

By the Monetary Convention, concluded at Paris on the 23rd December, 1865, France, Italy, Belgium, and Switzerland, agreed to assimilate their respective coinages, so as to make them of the same weight and fineness.

Each country coins gold coins of 100, 50, 20, 10, and 5 francs, of the standard of 900 and allowance of $\frac{3}{1000}$ths; silver 5 franc pieces of the standard of 900 and allowance of $\frac{5}{1000}$ths, and pieces of 1 and 2 francs and 50 and 20 centimes of the standard of 835 and allowance of $\frac{5}{1000}$ths.

When the coins are reduced by wear to the extent of 5 per cent. below the above mentioned allowance, or when their stamped impressions have become effaced, they are to be re-coined.

BANK NOTES.

The only Bank of issue is the Bank of France, which issues notes of 5, 10, 20, 50, 100, 500, and 1,000 francs. These can be changed into gold and silver at their full nominal value.

The par of exchange with London is 25 francs for £1 sterling.

The mint par between England and France is £1 sterling for 25 francs 22½ centimes, that is, the two amounts of English and French money contain the same quantities of pure gold.

COMPARATIVE TABLE OF FRENCH, GERMAN, UNITED STATES, AND BRITISH COINS.

French Coins.	German value.		America. United States Value.		British Value.		
	Reichsmarks.	*Pfennige.*	*Dollars.*	*Cents.*	£	s.	d.
100 Francs	80	0	19	36	4	0	0
50 ,,	40	0	9	68	2	0	0
20 ,,	16	0	3	87	0	16	0
10 ,,	8	0	1	93	0	8	0
5 ,,	4	0	0	96½	0	4	0
2 ,,	1	60	0	38	0	1	7½
1 ,,	0	80	0	19	0	0	10
50 Centimes	0	40	0	9½	0	0	5
20 ,,	0	16	0	4	0	0	2
10 ,,	0	8	0	2	0	0	1
5 ,,	0	4	0	1	0	0	0½
2 ,,	0	1⅗	0	0⅖	0	0	0⅕
1 ,,	0	⅘	0	0⅕	0	0	0 1/10

AVERAGE COURSE OF EXCHANGE WITH LONDON AT THREE MONTHS' DATE FOR £1 STERLING.

Years.	Francs.	Centimes.	Years.	Francs.	Centimes.
1841—1845	25	80	1861—1865	25	56
1846—1850	25	72	1866—1870	25	37
1851—1855	25	38	1871—1875	25	71
1856—1860	25	50	1876—1882		

RUSSIA.

Paper has long been the chief medium of payment, and gold and silver are at a premium. The paper ruble is worth from 2s. 6d. to 2s. 9d. sterling. The most usual coins are the 10, 15, and 20 copeek pieces in silver, and the copper coins of 5, 3, 2, 1, ½, and ¼ copecks.

Russian value.		*Systematic name.*		*English value.*
100 Copecks	=	1 Silver Ruble	=	3s. 2d.

GOLD COINS.

The gold coins are the *Imperial*, worth 10 rubles, *Half-Imperial*, and the 3 *Ruble Piece*. The Half-imperial contains $\frac{4}{56}$ths, or 135 dolis, of pure gold, and $\frac{8}{56}$th, or $12\frac{3}{11}$ dolis, of alloy, and weighs $147\frac{3}{11}$ dolis.

SILVER COINS.

The silver coins are the *Ruble*, worth 3s. 2d.; the *Poltinnick* of 50 copecks, worth 1s. 7d. sterling; the *Tchetwertak* of 25 copecks, worth 9½d. sterling. The silver coins are of the standard of 83½ parts of pure silver and 12½ alloy.

BILLON COINS.

The *Dwougriwenny* of 20 copecks, worth 7½d. sterling; the 15 *Copeck piece*, worth $5\frac{7}{10}$; the *Griwennick* of 10 copecks, worth 3¾d. sterling; and there was formerly the *Priatachek* of

5 copecks, worth $1\frac{9}{10}$d. sterling, but it is no longer minted. The alloyed small change money or billon coins contain only about 50 per cent. of pure silver.

COPPER COINS.

The copper coins are the 5 *Copeck Piece*, worth $1\frac{9}{10}$d. sterling; the 3 *Copeck Piece*, worth $1\frac{7}{10}$d. sterling; the *Copeck Piece*, worth $\frac{1}{2}\frac{9}{0}$d. sterling; the 2 *Copeck Piece*, worth $\frac{1}{2}\frac{7}{0}$d. sterling; the $\frac{1}{2}$ *Copeck Piece*, worth $\frac{1}{10}\frac{9}{0}$d. sterling; and the $\frac{1}{4}$ *Copeck Piece*, worth $\frac{1}{20}\frac{9}{0}$d. sterling.

Besides these coins there are also some old coins in circulation which have not been withdrawn, viz., in silver the $1\frac{1}{2}$ *Ruble Piece*, the 30 *Copeck Piece*, and the *Piatialtynny* = 15 copecks. In copper the *Grivna*, formerly equal to 10 copecks, but now having the nominal value of 3 copecks; the *Piatak*, formerly equal to 5 copecks, now nominally worth $1\frac{1}{2}$ copecks; the *Grosch*, formerly equal to 2 copecks, now nominally worth $\frac{1}{2}$ copeck; and the *Copeck*, now nominally worth $\frac{1}{4}$ copeck.

BANK NOTES.

The Bank Notes of Russia are at a discount as compared with *specie*. They are notes of 1, 5, 10, 20, 50, 100, 1,000, and 2,000 rubles.

The mint par of exchange with London is 3s. 2d. per silver ruble, and at that rate £1 English, equals 7 rubles 31 $\frac{1}{3}$ copecks; 5s. equals 1 ruble $57\frac{1}{3}$ copecks; 1s. equals $31\frac{1}{3}$ copecks; 1d. equals $2\frac{2}{3}$ copecks.

RUSSIA.

FINLAND.

Finish value.	*Systematic name.*		*English value.* £	s.	d.
	1 Penni		0	0	$\frac{1}{3}\frac{9}{0}$
100 Penniä	1 Mark	=	0	0	$9\frac{1}{2}$

Gold Coins.—10 and 20 marks.

Silver Coins.—2 and 1 marks, and 50 and 25 penni.

Copper Coins.—10, 5, and 1 penni.

Bank Notes.—100, 20, 10, and 5 marks State Bank, and 100, 25, and 15 marks Private Banks.

AUSTRIA.

Austrian value.	*Systematic name.*	*Approximate English value.*
100 New Kreuzers.	= 1 New Florin	= 1s. 11½d.

GOLD COINS.

The gold coins are the 8 florin and 4 florin pieces, which are of the same weight and fineness as the French gold pieces of 20 and 10 francs, and the coins are inscribed 20 francs and 10 francs, as well as 8 gulden and 4 gulden. There are also ducats of the value of 4·8 florins.

SILVER COINS.

The silver coins are the 2 *Florin Piece*, worth 3s. 10½d. sterling; and the *Florin* worth 1s. 11½d. sterling; the ½ *Florin* worth 5¾d.; the 10, 5, and 1 *Kreuzer Pieces*, worth respectively 2⅛d. 1⅛d. and $\frac{1}{10}$d. sterling. There are also dollars (for the Eastern trade) having the effigy of the Empress Maria Theresa.

COPPER COINS.

The copper coins are the *Kreuzer*, a little less in value than an English farthing ($\frac{1}{10}$) and the ½ and ¼ *Kreuzer Pieces*.

BANK NOTES.

Practically the chief medium of payment is a paper currency consisting of Bank Notes of 10 kreuzers, and of 1, 5, 10, 100, and 1000 florins, which the National Bank undertakes to exchange on demand for specie at their full nominal value. The paper money fluctuates in value from day to day, and is generally at a discount.

The Austrian money prior to 1858 was based upon the *Convention* or 20 *Florin Standard*, which was introduced in 1753, in accordance with a Convention between Austria and Bavaria. By that Convention a Cologne mark weight, Hamburgh standard, of fine silver (3608 grains Troy) was coined into 20 florins. This continued to be the value of the currency of Austria till 1858. In that year the coinage was altered, and

the 45 *Florin value*, with its decimal divisions, was introduced, and 105 of the new florins were made equal to 100 of the old ones. Coins of the old 20 florin standard are still in circulation and can be exchanged for the new currency at fixed rates:—

Taking the par of exchange as 1s. 11½d. sterling for 1 florin, £1 English equals 10fl. 28½ kr.; 5s. equals 2fl. 57½ kr.; 1s. equals 51½ kr.; 1d. equals 4¾ kr.

GERMANY.

The Imperial Monetary System for all Germany, introduced by the laws of 4th December, 1871, 9th July, 1873, and 30th January, 1875, is as follows:—100 Pfennige = 1 Reichsmark = 1s. English.

GOLD COINS.

20, 10, 5 Reichsmarks = respectively, £1; 10s.; and 5s. English.

SILVER COINS.

5, 2, and 1 Reichsmarks pieces, and 50 and 20 Pfennige pieces, = respectively, 5s.; 2s.; 1s.; 6d.; and 2½d. English. Silver coins are a legal tender up to 20 marks.

NICKEL COINS.

10, and 5, Pfennige pieces, = respectively, 1½d. and ½d. English.

BRONZE COINS.

2 and 1 Pfennige pieces = respectively, ⅓d. and ¼d. English.

BANK NOTES.

The Bank Notes are for 100, 200, 500, and 1,000 Reichsmarks or a multiply of 1,000 Reichsmarks.

Compared with the Old System of North and South Germany, the value of Imperial German money is as follows:—

COMPARATIVE TABLE OF IMPERIAL GERMAN MONEY, BASED ON THE TARIFF CONTAINED IN THE LAW OF 5TH DECEMBER, 1871.

Imperial German Money.	Old South German Currency.	Old North German Currency.	Lubec or Hamburg Customary Currency.	Bremen Value, Gold Reckoning.	English Value. *
GOLD COINS.	*Fl. Kr. Pf.*	*Th. Sg. Pf.*	*Mk. Sch. Pf*	*Thr. Gr. Sc.*	*£ s. d.*
20 Reichsmarks	11 40 0	6 20 0	16 10 8	6 1 3	1 0 0
10 „ ..	5 50 0	3 10 0	8 5 4	3 0 4	0 10 0
5 „ ..	2 55 0	1 20 0	4 2 8	1 37 4	0 5 0
SILVER COINS.					
5 Reichsmarks	2 55 0	1 20 0	4 2 8	1 37 4	0 5 0
2 „ ..	1 10 0	0 20 0	1 10 9	0 45 0	0 2 0
1 „ ..	0 35 0	0 10 0	0 13 4	0 25 3	0 1 0
50 Pfennige ..	0 17 2	0 5 0	0 6 8	0 12 4	0 0 6
20 „ ..	0 7 0	0 2 0	0 2 7	0 5 $\frac{3}{5}$	0 0 2$\frac{1}{2}$
NICKEL COINS.					
10 Pfennige ..	0 3 2	0 1 0	0 1 4	0 2 $\frac{1}{5}$	0 0 1$\frac{1}{2}$
5 „ ..	0 1 3	0 0 6	0 0 8	0 1 $\frac{1}{4}$	0 0 0$\frac{1}{2}$
BRONZE COINS.					
2 Pfennige ..	0 0 2$\frac{2}{5}$	0 0 2$\frac{1}{2}$	0 0 3	0 0 $\frac{1}{5}$	0 0 1$\frac{1}{2}$
1 „ ..	0 0 1$\frac{2}{5}$	0 0 1$\frac{1}{4}$	0 0 1$\frac{1}{2}$	0 0 $\frac{1}{4}$	0 0 1$\frac{1}{5}$

OLD MONETARY SYSTEM IN NORTH AND SOUTH GERMANY.

Up to 1872 the Monetary System in North Germany† was

* The English value here given, which is only approximate, is sufficiently near for all practical purposes, where only small payments are concerned; but the par value is about 20 marks 40 pfennige per pound sterling, or about 19 shillings and 7$\frac{1}{4}$d. sterling for the 20 mark piece.

† The States of NORTH GERMANY, otherwise called the North Zollverein States, are the following:—The Kingdoms of Prussia, Saxony, and Hanover, Electorate of Hesse, Grand Duchy of Saxony, Duchies of Saxe-Altenburg, Saxe Gotha, Brunswick, Oldenburg, with Birkenfeld, Anhalt-Dessau-Gotha, and Anhalt-Bernburg, and the Principalities of Schwartzburg-Sonderhausen and Schwartzburg-Rudolstadt, Waldeck, and Pyrmont, Reuss (elder branch), Reuss (younger branch), Schaumburg-Lippe and Lippe.

The States of SOUTH GERMANY, otherwise called the South Zollverein States, are the following:—The Kingdoms of Bavaria and Wurtemburg, Grand Duchies of Baden and Hesse, Duchy of Saxe-Coburg; the Hereditary Prussian States, Duchy of Nassau, Principality of Schwartzburg-Rudolstadt, Electorate of Hesse-Homburg, and the Free City of Frankfort. The Zollvereign (customs-union) was a league of the States of Germany first formed in 1888, for assimilating, uniting, and simplifying the fiscal arrangements of the several States of Germany. It came into operation on the 1st January, 1884. It abolished all restrictions on internal communication, established a common system of duties on exports and *imports, and provided* for a common system of money, weights, and *measures.*

as follows:—12 Pfennige = 1 Silber groschen, = 1d. 1-5th; 30 Silver Groschen, = 1 Thaler, = 3s. In South Germany the system was as follows:—4 Pfennige, = 1 kreuzer, = ¼; 60 kreuzers, = 1 florin, = 1s. 8d.

The Old Bank Notes were for 1, 5, 10, 25, 50, and 100, thalers, in North Germany; and for 1, 2, 5, 10, 25, 50, and 100 florins, in South Germany.

The value of the old Currency of North and South Germany is given in the following table.

TABLE OF OLD COINS OF NORTH AND SOUTH GERMANY, COMPARED WITH IMPERIAL GERMAN MONEY AND ENGLISH MONEY.

	Old North German Value.			Old South German Value.			New Imperial German Value		English value		
GOLD COINS.	*Th.*	*sg.*	*pf.*	*Fl.*	*kr.*	*pf.*	*Rm.*	*pfg.*	£	*s.*	*d.*
Frederiks d'Or	5	20	0	10	0	0	17	0	0	17	0
Double do.	11	10	0	20	0	0	34	0	1	14	0
Half do.	2	25	0	5	0	0	8	50	0	8	6
Union Crown	9	6	0	16	6	0	27	0	1	7	3
Half do.	4	18	0	8	3	0	13	50	0	13	6
SILVER COINS.											
Thaler	1	0	0	1	45	0	3	0	0	3	0
Double Thaler	2	0	0	3	30	0	6	0	0	6	0
10 Silver Groschen	0	10	0	0	35	0	1	0	0	1	0
5 do.	0	5	0	0	17	2	0	50	0	0	6
2½ do.	0	2	6	0	8	3	0	25	0	0	3
1 do.	0	1	0	0	3	2	0	10	0	0	1¼
½ do.	0	0	6	0	1	3	0	5	0	0	0½
Florin	0	17	2	1	0	0	1	71	0	1	8
Half do.	0	8	7	0	30	0	0	86	6	0	10
Quarter do.	0	4	4	0	15	0	0	43	0	0	5
6 Kreuzers	0	1	9	0	6	0	0	17	0	0	2
3 do.	0	0	10	0	3	0	0	9	0	0	1
1 do.	0	0	0	0	1	0	0	1	0	0	0½
COPPER COINS.											
4 Pfennige	0	0	4	0	0	4	0	1	0	0	0¼
3 do.	0	0	3	0	0	3	0	3 1-7th	0	0	3-10ths
2 do.	0	0	2	0	0	2	0	1 3-7ths	0	0	2-10ths
1 do.	0	0	1	0	0	1	0	0 5-7ths	0	0	1-10th

HAMBURG AND LUBECK.

Since 15th February, 1873, the system of coinage and accounts in Hamburg has been that of the German Empire.

The par of exchange is about 20 Reichsmarks 40 Pfennige per pound (£) sterling.

The old system was as follows :—

12 Pfennige = 1 Schilling : 16 Schillinges 1 Mark = 1s. 2d.

Reckonings and payments were also recorded in Thalers of 3 Marks of 16 Schillinges.

The old money of Hamburg had a twofold valuation, the one called *Currency* and the other *Banco*. In *currency value* the Cologne Mark weight (Hamburg standard), viz., 3608 grains Troy of pure silver, was coined till 1856 into 34 Marks, and after that date into 35 Marks.

The Mark Banco represented silver $\frac{4}{9}$ths pure; it was not a coin, but only a money of account or credit money. The Cologne Mark weight of silver was supposed to be equivalent to $27\frac{3}{4}$ Mark Banco, and the Mark Banco was of the value of about 1s. $5\frac{1}{2}$d. It represented a credit in the Hamburg Bank, and all the Hamburg merchants used to record their money transactions in Marks Banco. This old monetary system of Hamburg, which dated its origin from the year 1619, was taken up in consequence of the German Coinage Law of 4th December, 1871. After the 15th February, 1873, debts expressed in Marks Banco were paid in Prussian half thalers, and from that date the new German currency (Reichsmarks and Pfennige) was introduced in Hamburg.

The gold coins were the *Pistole* and the *Ducat*. The Pistole was equal to 10 Marks, 14 Schillinges (*Bank* value). The Ducat was equal to 6 Marks, 4 Schillinges, Bank value, or $100\frac{7}{16}$ Schillinges, Currency value, and was worth about 9s. 4d. sterling.

The silver coins were the *Double Thaler*, equal to 5 marks (currency value); the *Thaler* of $2\frac{1}{2}$ marks; the *Mark;* the 8 *Schilling Piece;* the 4 *Schilling Piece;* the 2 *Schilling Piece;* the *Schilling*; the $\frac{1}{2}$ *Schilling*, or *Sechsling;* and the $\frac{1}{4}$ *Schilling*, or *Dreiling*. The *Mark* contained 750 parts by weight out of 1000 of pure silver, the 8 schilling piece contained 625, the 4 schilling piece $562\frac{1}{2}$, the 2 schilling piece $437\frac{1}{2}$, and the 1 schilling piece 250 of such parts.

The difference between the *Bank value* and the *Currency value* was called the *Bank Agio*, and was perpetually varying with the price of pure silver.

COMPARATIVE VALUE OF HAMBURG AND LUBECK OLD MONEY, IMPERIAL GERMAN MONEY, AND ENGLISH MONEY.*

Old Money of Hamburg and Lubeck.			Imperial German Money.		English Money.		
Marks.	*Schillinges*	*Pfennige.*	*Reichsmarks.*	*Pfennige.*	*Pounds.*	*Shillings.*	*Pence.*
0	½	0	0	1½	0	0	¼
0	¾	0	0	3¾	0	0	½
0	1	0	0	7½	0	0	1
0	2	0	0	15	0	0	2
0	4	0	0	30	0	0	3½
0	8	0	0	60	0	0	7
1	0	0	1	20	0	1	2½
(*Thaler*) 2	0	0	2	40	0	2	4
2½	8	0	3	0	0	3	0
3	0	0	3	60	0	3	7
4	0	..	4	80	0	4	9
(*Double Thaler*) 5	..	..	6	0	0	6	0
6	..	..	7	20	0	7	2
7	..	..	8	40	0	8	4
8	..	..	9	60	0	9	7
9	..	..	10	80	0	10	9
10	..	..	12	0	0	11	9
20	..	..	24	0	1	3	6
50	..	..	60	0	2	18	10
100	..	..	120	0	5	17	8
1,000	..	..	1,200	0	58	16	6
10,000	..	..	12,000	0	588	4	9

* In this table for sums over 10 Reichsmarks the English equivalents are computed at the par of 20 Reichsmarks 40 Pfennige per pound sterling; for lower sums the rate of one shilling sterling for a Reichsmark has been considered near enough; the more exact value of the Reichsmark is little over 11¾d.

BREMEN.

The currency and the denominations of money in which accounts are kept are the same as those of Imperial Germany. The old system was as follows:—4 Schwaren, 1 Grote; 72 Grotes, 1 Thaler, 3s. 3d.

The gold coins were Danish, Hanoverian, and other *Pistoles*, of 5 Thalers, and Ducats 2½ Thalers at variable agio or premium.

The silver coins were the ⅙ Thaler of 36 Grote; the ⅓ *Thaler* of 12 Grote, worth 6½d. sterling; the 6 Grote Piece, worth 3¼d. sterling; the Grote worth ½d. sterling (½d.).

TABLE OF OLD BREMEN MONEY COMPARED WITH IMPERIAL GERMAN MONEY AND ENGLISH MONEY.

Old Bremen Money.			Imperial German Money.		English Money.		
Thaler.	*Grote.*	*Schwaren.*	*Reichsmarks.*	*Pfennige.*	£ *Pounds.*	s. *Shillings.*	d. *Pence.*
0	0	1	0	1	0	0	¼
0	0	2	0	2	0	0	½
0	0	3	0	3	0	0	¾
0	0	4	0	4	0	0	1
0	1	0	0	5	0	0	1¼
0	6	0	0	28	0	0	3½
(⅓ thaler) 0	12	0	0	55	0	0	6½
(⅙ thaler) 0	36	0	1	66	0	1	7½
1	0	0	3	32	0	3	8
5	0	0	16	61	0	16	3
10	0	0	33	21	1	12	6
15	0	0	49	82	2	8	9
20	0	0	66	43	3	4	0
50	0	0	166	7	8	3	5
100	0	0	332	14	16	6	10
1,000	0	0	3,321	43	162	16	8

The copper coins were pieces of 2½ and 1 Schwaren.

SPAIN.

By a decree dated 19th October, 1868, the money of Spain was assimilated to that of France, Italy, Belgium, and Switzerland. The Peseta of 4 Reals, which is equivalent to a franc, was declared the monetary unit with subdivisions as follows:—

Spanish value.		*Systematic name.*		*English value.*
		1 Centime	=	⅕d.
100 Centimes	=	1 Peseta	=	9⅗d.

GOLD COINS.

The gold coins are pieces of 100, 50, 25,* 20, 10, and 5 Pesetas, equal respectively to £4, £2, 16s., 8s., and 4s. English.

SILVER COINS.

The silver coins are pieces of 5 and 2 Pesetas, and 1 Peseta, and 25 and 20 Centimes, equal respectively to 4s., 1s. 7½d. 2¼d. and 2d. English.

BRONZE COINS.

The bronze coins are pieces of 1, 2, 5 and 10 Centimes. The 10 Centime piece = 1d. English.

SPANISH MONETARY SYSTEM PRIOR TO OCTOBER, 1868.

Prior to 1868, the currency was as follows:—

Spanish value.		*Systematic name.*		*Approximate English value*
100 Centimes	=	1 Real	=	2¼d.
10 Reals	=	1 Escudo†	=	2s. 1d.

OLD GOLD COINS.

The gold coins were the (1) *Onza* or doubloon equal to 80 pesetas or 320 reals; (2) the *Half-Onza* equal to 40 pesetas or 160 reals; the *Isabel* equal to 25 pesetas or 100 reals; (3) the *Quarter-Onza* equal to 20 pesetas or 80 reals; (4) the *One-eight Onza* of 40 reals or 10 pesetas; the 21¼ *real piece* equal to 5 pesetas 31 centimes; and (5) the *Dollar* of 20 reals or 5 pesetas.

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* Minted under Royal decree of August, 1876.

†In 1865 by a Royal decree the Escudo was constituted the highest unit of account. Before that date the real and the centime were the only denominations of account.

(1) or Quadruple-pistole; (2) or Media-Onza or Half-doubloon; (3) or Pistole or Doubloon de Achenta; (4) or Cudrenta or Doubloon de Escudo; (5) or Corinilla; Escudito, Durillo, or Doubloon de Vienti.

OLD SILVER COINS.

The silver coins were the *Dollar* (duro) equal to 5 pesetas or 20 reals; the *Escudo* equal to 2 pesetas or 10 reals; the *Peseta de Columnas* of 5 reals or 1¼ pesetas; the *Peseta* of 4 reals; the 2½ *Real Piece;* the 2 *Real Piece* or ½ peseta; and the 1 *Real Piece* or ¼ peseta.

OLD COPPER COINS.

The copper coins were the *Half Real* equal to 12½ centimes, and the *Quarter Real* equal to 6 centimes; there were also older pieces of 2 Cuartos, and 1 Cuarto, 8½ Cuartos being equal to a Real.

BANK NOTES.

The notes of the Bank of Spain are current only in Madrid; the capital town of each province has a bank of issue. The bank notes in circulation vary from 25 pesetas or 100 reals to 1,000 pesetas or 4,000 reals.

GIBRALTAR.

Since 2nd May, 1881, the standard of value has been the Spanish gold 25 peseta piece, containing 124·45 Troy grains of gold $\frac{9}{10}$ths fine. The denominations of account are as follows:—

100 Centimes = 1 Peseta = 9½d. English.

GOLD COINS.—100, 50, 25, 10, and 5 Pesetas. SILVER COINS.—5, 2, and 1 Peseta Pieces, and 15 and 20 Centimes. BRONZE COINS.—10, 5, 2, and 1 Centime Pieces.

From March, 1872, to 2nd May, 1881, the standard of value was the Spanish Doblon d'Isabel, and the moneys of account were as follows:—

10 Decimas de Real Vellon	= 1 Real Vellon	=	2½d.
20 Reals Vellon	= 1 Dollar	=	4s. 1d.
100 Reals Vellon	= 1 Doblon	=	£1 0s. 5d.

GOLD COINS.—Doblon; 2 and 1 Dollars. SILVER COINS.—Dollar; Half Dollar; 2, 1, and ½ Reals of Plate. The Real of Plate = 6d. sterling. BASE SILVER COINS.—Peseta of 4 Reals Vellon = 9½d.; 2 and 1 Reals Vellon. BRONZE COINS.—Half Real Vellon; Cuartillo = ¾d.; and 2, 1, and ½ Decimas de *Real Vellon.*

PORTUGAL.

The unit of account is the *Rei*, worth $\frac{4}{10}$d. sterling, and in recording payments and receipts no other denomination of money besides Reis is used.

In accounts the symbol $ is used to denote the thousands' place, a colon (:) the place of millions (contos), and a full point (.) the place of thousands of millions. Thus 1000000000 (for one thousand millions of Reis) would be 1.000:000$000.

A *Moidore* is 4$000 Reis, and is worth £1 1s. 1d. sterling. A *Cruzado* = $400; a *Cruzado Novo*, or *Pinto* = $840. A *Quartinho* = 1$200; a *Testo* or *Testoon* = $100, and a *Ventem* = 20 Reis.

GOLD COINS.

The gold coins are as follows:—The *Corôa* (Crown) equal to 10000 Reis (10$000) and worth £2 4s. 5½d. sterling; the *Meia Corôa* (half-crown) equal to 5000 Reis (5$000), and worth £1. 2s. 2¾d. sterling; the *Quintos de Corôa* ($\frac{1}{5}$ of a Crown), equal to 2000 Reis 2$000), and worth 8s. 10d. sterling; the *Decimos de Corôa* ($\frac{1}{10}$ of a Crown) equal to 1000 Reis (1$000) and worth 4s. 5½d. sterling; the *Peça Antiga* (old piece), formerly called *Johanese* or *Joe*, equal to 8000 Reis (8$800) and worth £1 15s. 6d. sterling; *Meia Peça Antiga* (half-piece) equal to 4000 Reis (4$000) and worth 17s. 9½d. sterling.

SILVER COINS.

The silver coins are the *Cincotestoes* (5 Testoons) equal to 500 Reis, worth 2s. 2¾d. sterling; the *Doistestoes* (2 Testoons) equal to 200 Reis ($200) and worth 10¾d. sterling. The *Testao* (the Testoon) equal to 100 Reis ($200) and worth 5½d. sterling. *Meia Testao* (Half Testoon) equal to 50 Reis ($050) and worth 2¾d. sterling.

BILLON COINS.

In billon there is the *Potacao* of 40 Reis, worth $\frac{3}{5}$d. sterling.

COPPER COINS.

The copper coins are the *Ventem* of 20 Reis, worth $1\frac{1}{5}$d. sterling; the *Meio-Ventem* of 10 Reis, worth $\frac{3}{5}$d. sterling.

the *Cinco-Reis* of 5 Reis, worth $\frac{1}{10}$d. sterling, and the 3 *Reis Piece*.

Taking the par of Exchange as 53$\frac{1}{2}$d. sterling for a Milreis (1000 reis), we have £1 sterling equal to 4,500 Reis (4$\frac{1}{2}$ milreis); 5s. equal to 1,125 Reis; 1s. equal to 225 Reis; 1d. equal to 18$\frac{3}{4}$ Reis.

THE NETHERLANDS.

Dutch value.		*Systematic name.*		*English value*
100 Cents	=	1 Guilder or Florin	=	1s. 8d.

In 1875 gold which had been demonetized in 1847 was remonetized and made a legal tender side by side with silver in Holland, but silver alone continues to be the standard in the Dutch colonies.

GOLD COINS.

The gold coins are the 10 gulden piece = 16s. 8d. English and the ducat (5·75 florins) = 9s. 7d. English.

The 10 gulden piece contains 900 parts of pure gold to 100 parts of alloy. The weight of the 10 gulden piece is 6·720 grammes and the tolerance of variation or mint remedy is 2 parts in 1000 per weight (2 per Mille) either above or under the standard weight.

SILVER COINS.

The silver coins are the 2$\frac{1}{2}$ *Gulden Piece*; the *Florin* or *Guilder;* and the $\frac{1}{2}$ *Florin*. These silver coins are of the fineness of 853 parts in 1000. There are also in silver 720 thousandths fine, the 25, 10, and 5 *Cent Pieces*.

BRONZE COINS.

The bronze coins are the 2$\frac{1}{2}$, 1 and $\frac{1}{2}$ *Cent* pieces worth $\frac{1}{2}$d., $\frac{1}{4}$d. and $\frac{1}{10}$d.

BANK NOTES.

1, 5, 10, 25, 40, 60, and 100 gulden.

At the rate of 1s. 8d. sterling for the Guilder, £1 sterling is equal to 12 Guilders or Florins; 5s. is equal to 3 Florins; 1s. is equal to 60 cents.; 1d. is equal to 5 Cents.

BELGIUM.

Belgium value.		*Systematic name.*		*English value*
100 Centimes	=	1 Franc	=	9½d.

GOLD COINS.

The gold coins are pieces of 100, 50, 20, 10, and 5 Francs of the standard of 900, and allowance of $\frac{3}{1000}$ths.

SILVER COINS.

The silver coins are the 5, 2, 1, and ½ Franc pieces, and the 20 Centime piece. The 5 Franc piece is of the standard of 900 and allowance of $\frac{3}{1000}$ths, the other silver coins are of the standard of 835 and allowance of $\frac{3}{1000}$th.

COPPER COINS.

The copper coins are pieces of 1 and 2 *Centimes*.

NICKEL COINS.

The nickel coins are pieces of 5, 10, and 20 *Centimes*.

BANK NOTES.

There are bank notes of 1000, 500, 100, 50.

Coins of 50 Centimes are not a legal tender for payment of more than $\frac{1}{10}$th of the sum due.

In copper coins not more than 7 Francs worth are legal at any single payment.

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* From 1st January, 1869, the following coins ceased to be current in Belgium:—

French Money.—Pieces of 1 and 2 Francs and 50 and 20 Centimes, bearing date prior to 1852.

Belgian Money.—Pieces of 1 and 2 Francs and 50 and 20 Centimes, bearing the effigy of Leopold I.

Italian Money.—All pieces struck in any of the States which compose the present Kingdom of Italy, and bearing date prior to 1863, except Lires of Lucca and pieces of 50, 20 and 10 Grani of the late Kingdom of the Two Sicilies, which are accepted by the Italian Treasury.

Swiss Money.—Pieces of 1 and 2 Francs and 50 Centimes, bearing date 1850 and 1861.

DENMARK.

Under the Monetary law of 23rd May, 1873, and since the 1st January, 1875, the system of currency has been as follows:

Danish value.		*Systematic name.*		*English value.*
100 Öre	=	1 Kronor	=	1s. 1½d.

Gold is the standard of value and the principal medium of exchange in Denmark.

GOLD COINS.

The gold coins are the *Gold Crown* of 10 Kronors, equal to 10s. 11¾d. English, and the 20 *Kronor piece* equal to £1 1s. 11½d. English.

SILVER COINS.

The silver coins are pieces of 4, 2. and 1 *Kronors*, and of 50, 40, 25, and 10 *Öre*, equal respectively to 4s. 5½d., 2s. 2½d., 1s. 1d., 6¾d., 5½d., 3½d. and 1½d. English.

BRONZE COINS.

The bronze coins are the 5, 2 and 1 Öre pieces, equal respectively to ¾d., ⅜d. and ⅛d. English.

BANK NOTES.

All notes are expressed in the denominations of gold crowns, and amounts above 2 gold crowns or 20 kronors must be paid in gold when demanded, and the metallic reserve, as a security for the note issue, is gold.

COMPARATIVE TABLE OF OLD AND NEW DANISH MONEY, FRENCH MONEY, AND ENGLISH MONEY.

New Danish Money.		Old Danish Money.		French Money.		English Money.		
Kronors.	*Öre.*	*Rigsdaler*	*Skilling.*	*Francs.*	*Centimes.*	£	*s.*	*d.*
20	0	10	0	27	71	1	1	11½
10	0	5	0	13	85	0	10	11¾
4	0	2	0	2	64	0	4	5½
2	0	1	0	1	32	0	2	2¾
1	0	0	48	0	66	0	1	1½
0	50	0	24	0	53	0	0	6¾
0	40	0	19	0	32	0	0	5½
0	25	0	12	0	13	0	0	3½
0	10	0	5	0	6½	0	0	1½
0	5	0	2½	0	2	0	0	¾
0	2	0	1	0	1	0	0	⅜
0	1	0	½			0	0	⅛

SWEDEN.

The system of currency and the denomination of money used in keeping accounts have been the same as those of Denmark since 1st January, 1875, and the basis of the system is a gold standard.

Swedish value.		*Systematic name.*		*English value.*
100 Öre	=	1 Riksdaler	=	1s. 1½d.

GOLD COINS.

The gold coins are the 20 and 10 *Kronor Pieces*, equal respectively to £1 1s. 11½d. and 10s. 11½d. English.

SILVER COINS.

The siver coins are the 4, the 2, and the 1 *Kronor pieces*, the 50, 40, 25 and 10 *Öre pieces*.

BRONZE COINS.

The bronze coins are pieces of 5, 2 and 1 Öre.

At the rate of £1 sterling for 18 Kronors, 5s. is equal to 4 Kronors 50 Öre; 1s. is equal to 90 Öre; 1d. is equal to 7½ Öre.

NORWAY.

Norwegian value.		*Systematic name.*		*English value.*
100 Öre or 30 Skillingen	=	1 Kronor	=	1s. 1½d.
4 Kronors	=	1 Specie-Daler	=	4s. 5½d.

In 1876 the Government of Norway acceded to the Scandinavian Monetary Convention of the 4th June, 1873, and from 1st January, 1877, the above denominations were adopted for accounts.

GOLD COINS.

The gold coins are the pieces of 5 *Specie-Dalers* or 20 *Kronors*, and 2½ *Specie Dalers* or 10 *Kronors*.

SILVER COINS.

The silver coins are the 2 *Kronor piece*; the *Kronor*, or 30 Skilling piece; the 24 *Skilling piece*; the 15 *Skilling*, or 50 *Öre piece*; the 12 *Skilling*, or 40 *Öre piece*; and the 8 *Skilling* or 10 *Öre piece*. In small silver money (*Skillemynt**) there are Pieces of 4 and 2 Skillingen, worth respectively 1½d. and ½d. sterling.

BRONZE COINS.

The bronze coins are the 2 *Skilling* or 6 *Öre piece*, the 5 *Öre* or 1½ *Skilling piece*, the 1 *Skilling* or 3 *Ore piece*, and the ½ *Skilling* or 1½ *Ore piece*, the 2 *Ore piece*, and the 1 *Ore piece*.

BANK NOTES.

The bank notes are for 400 Kronors or 100 Specie-Dalers; 200 Kronors or 50 Specie-Dalers; 40 Kronors or 10 Specie-Dalers; 4 Kronors or 1 Specie-Dalers; 2 Kronors, or ½ Specie-Daler; and 1 Kronor or ¼ Specie-Daler.

SWITZERLAND.

The unit of the Swiss monetary system is the franc; it weighs 5 grammes.

Swiss value.		*Systematic name.*		*English value.*
100 Rappen or Centimes	=	1 Franc	=	9½d.

GOLD COINS.

Switzerland has no gold coins of her own, but the gold coins of France, Belgium, and Italy, are current, namely, the pieces of 100, 50, 20, 10, and 5 francs.

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* The term *skillemynt* denotes small copper money of 2 and 1 Skillingen, as well as small silver money of 4 and 2 Skillingen.

SILVER COINS.

The silver coins are the 5, 2, 1, and ½ *Franc Pieces*, the 5 franc piece is of the standard of 900 and allowance $\frac{2}{1000}$ths, and the other silver coins are of the standard 835 and allowance $\frac{3}{1000}$ths.

BILLON COINS.

The billon or mixed metal coins are the *Zwanzigrappenstück* or *Zweitbatzen* or 20 *Centime Piece*, the *Batzen* or *Zehnrappenstück* or 10 *Centime Piece*, and the *Fünfrappenstück* or *Halbbatzen* or 5 *Centime Piece*.

BRONZE COINS.

The bronze coins are the *Zweier* or 2 *Rappen Piece*, and the *Rappe*.

No person is obliged to receive in payment more than 20 Francs in value of the silver coins under the 1 Franc piece, more than 20 Francs worth of billon, or more than 2 Francs worth of bronze.

ITALY.

The system of money is uniform for the whole of the Italian Kingdom, and is as follows:—

Italian value.		*Systematic name.*		*English value.*
100 Centesimi	=	1 Lira	=	9½d.

GOLD COINS.

The gold coins are the 100, 50, 20, 10, and 5 *Lire Pieces*.

These are all of the standard of 900 and allowance of $\frac{2}{1000}$ths in accordance with the Monetary Convention, referred to under the Article France, page 4.

SILVER COINS.

The silver coins are pieces of 5, 2, and 1 Lira and 50 and 20 Centimes.

The 5 Franc Piece is of the standard of 900 and allowance $\frac{3}{1000}$ths, and the 1 and 2 Lire Pieces and 20 and 50 Centime Pieces are of the standard of 835 and allowance of $\frac{3}{10}$ths.

BRONZE COINS.

The bronze coins are pieces of 1, 3, and 5 Centimes.

BANK NOTES.

1000, 500, 100, 50, 20, 10, 5, 2, 1, and ½ lire notes of the Banca Nationale and biglietti Consorziali.* From 1874 to 1882 paper money formed the principal part of the currency, and during that period was generally at a discount as compared with gold and silver money. In 1881, owing to the approaching return to specie payments, under the law of 9th April of that year, the value of paper money gradually rose until it was nearly equal to specie. From that time the 50 Centesimi and the 1 Lira and 2 Lire notes were gradually withdrawn from circulation and no new ones of these denominations were issued.

MALTA.

Government accounts are kept in *Pounds*, *Shillings*, and *Pence* sterling as in Great Britain, and British gold, silver, and bronze coins are in general use. Formerly the chief unit

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* These were notes issued in common by the Banca Nationale Toscana, the Banca Toscana Industriale Commerciale, the Banca Romana, the Banca di Napoli and the Banca di Sicilia. This association of banks of issue constituted by law in 1874 was dissolved from 30th June, 1881, but its notes continued to be a legal tender, and were under the law of 9th April, 1881, ordered to be payable in gold and silver money.

of mercantile accounts was the Scudo divided into 12 tari, and each taro into 20 grani as follows:—

			English value.
	1 Grano	=	$\frac{1}{12}$d.
20 Grani	= 1 Taro	=	1$\frac{2}{4}$d.
12 Tari	= 1 Scudo	=	1s. 7$\frac{1}{6}$d.
2$\frac{1}{2}$ Scudi	= 1 Pezza or Dollar (Sicilian)	=	4s. 0d.

	Value in Maltese Currency.		
	Scudi.	*Tari.*	*Grani.*
GOLD COINS—			
Doubloon of Spain and Mexico .	38	4	6
British Sovereign . . .	12	0	0
SILVER COINS—			
Spanish Dollar	2	6	0
Pezza, or Dollar of Sicily . .	2	4	16
British Crown (5s.) . . .	3	0	0
,, Half-Crown . . .	1	6	0
,, Shilling	0	7	4
BRONZE COINS—			
British Penny	0	0	12
,, Halfpenny . . .	0	0	6
,, Farthing. . . .	0	0	3
,, $\frac{1}{3}$ Farthing . . .	0	0	1

TURKEY.

Turkish value,		*Systematic name.*		*English value.*
40 Paras	=	1 Piastre	=	2$\frac{4}{5}$d.
*100 Piastres	=	1 Medjidie,* or Lira Turca	=	18s.

The Medjidie, or Lira Turca, and the Piastre are the only integral denominations of money now used in keeping accounts, Paras being written as fractions of the Piastre.

In retail transactions of the shop and the market, the Piastre is divided into 40 Paras, and each Para into 3 Aspres. The Para is worth about $\frac{1}{12}$d., and the Aspre $\frac{1}{3}$$\frac{1}{6}$d. sterling.

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* In accounts—
Pr. denotes Piastre. and
$\overline{£}$ denotes Medjidie or Lira Turca.

GOLD COINS.

The gold coins are the *Medjidie*, or Lira Turca, of 100 Piastres, the *Yarim* or *Half-Medjidie*, and the *Tzeirek*, or *Quarter-Medjidie*. There are also the *Purse*, or 500 Piastres, and the *Half Purse*, or 250 Piastres.

The gold coins contain 11 parts pure in 12.

SILVER COINS.

The silver coins are the *Guimuh* or *Real-Medjidie*, of 20 Piastres; the silver *Yarim* or *Half Real-Medjidie*, of 10 Piastres; the *Tzeirek* or *Quarter Real Medjidie*, of 5 Piastres; the *Thilik* or 2 *Piastre Piece*; the *Piastre Piece*, worth about $2\frac{4}{5}$d., and the *Half Piastre Piece*.

CYPRUS.

In 1878, on the proposal of the British High Commissioner, a new bronze coinage for circulation in the Island was executed in the Royal Mint. It consisted of a piastre of 180 grains; a half-piastre of 90 grains, and a quarter-piastre of 45 grains. For design the coins have on the obverse the effigy of Her Britannic Majesty, with the words "Victoria Queen" and the date; on the reverse the numerals "1," "$\frac{1}{2}$," "$\frac{1}{4}$", with the words "Cyprus" and "One Piastre" (or "Hay Piastre" or "Quarter Piastre") over and under them.

Piastre	=	$1\frac{1}{2}$d. English.
Half-Piastre	=	$\frac{3}{4}$d. ,,
Quarter-Piastre	=	$\frac{1}{3}$d. ,,

The silver coins contain 37 parts of pure silver to 3 parts of alloy.

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* The Piastre Piece is not generally current. It is not received by the government at all, but is accepted by men of business at a discount of from 20 to 25 per cent.

COPPER COINS.

The copper coins are the *Piastre Piece*, the *Half-Piastre Piece*, the *Quarter Piastre Piece*, the 5 *Para Piece*, and the *Para*.

CANDIA (or Crete.)

The money of Candia is that of Turkey.

GREECE.

Greek value		*Systematic name*		*English value*
100 Lepta	=	1 Drachma	=	9½d.

BANK NOTES.

The Bank Notes are for 1000, 500, 100, 25, and 10 drachmai. The right of issue of bank notes in Greece is limited to the National Bank. The Ionian Bank had the same privilege, for the Ionian Islands only, under the British Protectorate, and the privilege still continues. Both National Bank and Ionian Bank notes are payable in gold or silver on presentation, and there is no premium upon specie over notes. About 1878 there was a premium upon specie over notes for a short time while a forced circulation of a certain amount was decreed, consequent upon an advance by the Banks to the State; but that advance was liquidated before 1880, and with its liquidation the premium upon specie ceased.

GOLD COINS.

The gold coins are 100, 50, 25, 20, 10 and 5 *Drachmai*.

SILVER COINS.

The silver coins are the 5, 2, and 1 *Drachmai*, and the 50 and 20 *Lepta Pieces*.

BRONZE COINS

The bronze coins are pieces of 1, 2, 5, and 10 *Lepta*.

Not more than $\frac{1}{50}$ (or 2 per cent.) of the amount of any debt or account can be paid in bronze coins.

ROUMANIA.

100 Centimes = 1 Franc = 9½d. English.

The currency is the same as that of France.

SERVIA.

Under the law of 10th December, 1878, the monetary system is practically the same as that of the countries of the Latin union, and is as follows:—

				English value
100 Paras	=	1 Desior	=	0 0 9½.

Gold Coins.—20, 10, and 5 franc or desior pieces.

Silver Coins.—5, 2, and 1 desior pieces.

Bronze Coins.—10 and 5 para pieces.

BULGARIA.

Under the law of 9th June, 1880, the currency is to consist of gold, silver, and bronze pieces of the same weight and fineness as those of France. The silver leva or franc was made the standard of value.

				English value.
100 Stotinki	=	1 Leva	=	£0 0s. 9½d.

Gold Coins.—The law made no provision for the coinage of gold coins, although it was intended that there should be the "Alexandrini" or 20 Leva piece, and the "Polexandrini" or 10 Leva piece.

Silver Coins.—5, 2, 1, and ½ Leva pieces.

Bronze Coins.—10, 5, and 2 Stolinkis or Centimes. The design on the bronze coins is as follows:—On the obverse the arms of Bulgaria with mantle and crown, and on each side of

the escutcheon a lion rampant holding in one of its paws the arms, and in the other the Bulgarian standard. Above the crown is the word "Bulgaria," and below it, in a scroll, the motto "L'union fait la force." On the reverse a numeral, showing the value of the piece and the date of issue, surrounded by a wreath of ears of corn, roses and laurels.

THE IONIAN ISLANDS.

(Corfu, Santa Maura, Cephalonia Zante, Cerigo, Ithaca and Paxo.)

The monetary system is that of Greece.

CHINA.

The denominations of money used by the Chinese in keeping accounts are *Lëang Tsein*, *Fun*, and *Le*, called by foreigners *Taels*, *Mace*, *Candareens*, *and Cash*. Reckonings are never made above Taels, and the lower denominations are generally expressed as decimals of the Tael.

Chinese value.		*Systematic name.*		*English value.*
10 Cash	=	Candareen (Fun)	=	$\frac{7}{10}$d.
10 Candareens	=	1 Mace (Tsein)	=	7d.
10 Mace	=	1 Tael (Lëang)	=	5s. 10d.

In China there are no national gold or silver coins. For large payments, bullion of known purity passes current by weight.

The *Tael* is a definite weight, and its subdivisions, the *Mace* and *Candareen* are likewise weights, or rather decimal parts of the Tael; but they are used as denominations of money in keeping accounts. The Tael is equal to 579·84 grains or 1·208 ounce troy, and its value at that rate is about 6s. $6\frac{5}{8}$d. sterling. When accounts are kept in dollars of 100 Cents, the value of the Tael is estimated by its rate of exchange for dollars.

In China the fineness of gold and silver is expressed by dividing their weight into 100 equal parts called *Touch*. The number of these parts denotes the proportion there is of pure metal in 100 parts by weight.

The alloy used is called Pakfong, and is a mixture of zinc, nickel and copper.

Silver shoes of from 5 Mace to 10 Taels are used for money, but gold ingots are regarded as articles of commerce.

Ten Taels of pure silver are reckoned equal to 1 Tael of pure gold.

Wän-Yin is the Chinese term for fine silver, but the term *Se-Sze* (fine silver), or *Sysee* is also used. Sysee silver is never altogether pure. For the purposes of trade in the different provinces of the empire, shoes are moulded of different sizes and touches. The shoes forwarded to the Imperial Treasury at Pekin in payment of taxes are of a touch from 97 to 99, while the *Sysee* silver of commerce is generally of the fineness of 96.

The silver paid to the British authorities at Canton under the treaty of Nankin, in discharge of the Chinese indemnity, was received at the rate of 710 Taels to 1,000 dollars. This silver was found on assay to be between 97 and 98 touch (*i.e.* 13 dwts. better than English standard), and each lb. troy contained 13 grs. of pure gold. But the established rate among foreigners is 717 Taels for 1000 Dollars, and the Dollar for 4s. 2d. sterling. At this rate we have 5s. 10d. as the approximate Dollar value of the Tael of Silver.

The Le, or Cash,* is the only coin issued by the Chinese Government. It is a circular piece of mixed metal, about $\frac{8}{10}$ths of an inch in diameter. It has a square hole in the middle by which the pieces are strung in bundles of 100.

The average intrinsic value of the legal Cash, at present in circulation is about 5s. 1½d. sterling for 1000 Cash. But the proportion of counterfeit Cash in any single payment is usually very considerable, sometimes exceeding one-third, and the average rate at which in commercial transactions Cash are converted into Dollars is 970 Cash for a Dollar, or 4s. 3½d. for 1000 Cash.

BANK NOTES.

The Bank Notes in circulation vary from 300 Cash to 1,000 Taels.

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* It is called *Sapeque* by the French.

HONG KONG.

Hong-Kong.		*Systematic name.*		*English value.*
		1 Cent	=	½d.
100 Cents	=	1 Dollar	=	4s. 2d.†

SILVER COINS.

The standard silver coin is the *Mexican Dollar*, the current weight of which is 416 grains Troy, and its pureness 900 parts in 1000. The Japanese *Yen*, which is the equivalent of the Mexican dollar in both weight and pureness, is also current. As subsidiary token coins for local use there are also the silver pieces of 20, 10 and 5 cents. The ordinary currency of Hong-Kong consists chiefly of "chopped" or marked Mexican dollars; the Chinese merchants mark the dollars they receive with their *chop* or sign; but at Shanghai and in the North of China the Mexican dollar *Clean* (that is *not chopped*) is the only current standard coin. The American *trade dollar* is of the same fineness as the Mexican dollar and the Japanese *Yen*, but is 420 grains Troy in weight.

BRONZE COINS.

The bronze coins are the *Cent* and the *Mil*, or British *Cash*, representing the one thousandth part of a Dollar; they are a legal tender up to 1 Dollar only.

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† This is the nominal value of the Dollar. The British Imperial Treasury annually fixes sterling rates for the issue of the Dollar at Hong-Kong, in the Straits Settlements, and on the China station, in payment of sums which would be paid in England in sterling. Those annually revised rates are based on the average prices of standard silver in the London market during the preceding year. The rate was 3s. 8d. for the year 1882-3; 3s. 9d. for the years 1879-80; 1880-81 and 1881-82; it was 3s. 11d. for 1878-9; 3s. 9d. for 1877-78; 3s. 10d. for 1876-7; 4s. 1d. for 1875-6

THE BRITISH EMPIRE IN INDIA.

In 1835 a uniform system was established for all the presidencies :—

Indian value.		*Systematic name*		*English value.*
12 Pies	=	1 Anna	=	1½d.
16 Annas	=	1 Rupee	=	2s. 0d.*

GOLD COINS.

The gold coins are the *Mohur*, equal to 15 Rupees sterling; the *Double Mohur;* the *Five Rupee Piece*, equal to *one-third of a Mohur;* and the *Ten Rupee Piece*, equal to *two-thirds of a Mohur.*

The gold coins of India are $\frac{11}{12}$ths fine, that is, they contain 11 parts (out of 12) of pure gold to 1 part of alloy; but the quantity of gold coin in circulation is very small, not exceeding perhaps *one-tenth* part of the metallic currency.

By an order of the Government of India, dated October 28th, 1868, British or Australian sovereigns of current weight were constituted a legal tender for so much silver.

SILVER COINS.

The silver coins are the *Rupee*, the *Half-Rupee*, the *Quarter-Rupee*, and the *One-Eight-Rupee*, or *Double Anna.* Single Annas, each worth about $1\frac{3}{4}$d. sterling, were minted in 1835, and for some time afterwards, but they have not been issued of late years. The *Double Rupee* was authorised, but has never been put into circulation.

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*This is the nominal value of the rupee; its intrinsic or metallic value, estimated in British sterling money, depends upon the market price of silver as an article of commerce. As regards Indian pay and allowances and remittances to England, the sterling rate for the rupee is fixed annually by the British Treasury. For the year 1872-3 this official rate was 1s. 11½d.; for 1873-4 it was 1s. 10d.; for 1874-5 it was 1s. 10d.; for 1875-6 it was 1s. 10½d.; for 1876 it was 1s. 9¾d.; for 1877-8 it was 1s. 9½d.; for 1878-9 it was 1s. 9d.; and for 1879, 1880, and 1881-2 it was 1s. 8d. These official rates are based upon the average price of standard silver in the London market in the year preceding that to which the rate applies.

COPPER COINS.

The copper coins are the *Half Anna*, *Quarter Anna*, and the *Pie*. In Bengal the *Quarter Anna* is called a Paisa.

A *Lac* of Rupees is 100,000 Rupees, and, reckoning the Rupee at 2s., is worth £10,000 sterling.* A *Crore* of Rupees is 100 Lacs, or 10 millions of Rupees, and is worth £1,000,000 sterling.

In BOMBAY accounts are sometimes kept in *Rupees*, *Quarters*, and *Raes*. Thus :—

100 Raes	=	1 Quarter	=	6d. sterling.
4 Quarters	=	1 Rupee	=	2s. 0d. ,,

In MADRAS accounts were formerly (and in some places are now) kept in *Pagodas*, *Fanams*, and *Cash*, as follows :—

		1 Cash	=	¾d. English.
80 Cash	=	1 Fanam	=	4s. 0d.
45 Fanams	=	1 Star Pagoda	=	£9 0s. 0d.

In 1848 a distinct copper currency was introduced in the settlements of Penang, Singapore, and Malacca, to meet the want of a legal coin to represent, and to pass in Exchange for, fractions of the Spanish Dollar. This currency consists of the *Cent*, *the Half Cent*, and the *Quarter Cent*.

BURMAH.

In Burmah the system of Metallic Money is the primitive one of currency by weight. There are no Gold or Silver Coins, and the only Coins are a few in lead for small payments. Three kinds of metal—namely, lead, silver, and gold, are used as money. For large payments gold and silver are passed from hand to hand by weight; all payments are made by the balance, the unit of weight being the *Tical* or *Keyat*, a weight equal to 225½ Troy grains, or 16·556 grammes, and worth about 2s. 8d. English.

CEYLON.

Since 1st January, 1872, a new system, based on the Rupee of India, has been in use; it is as follows :—100 Cents = 1 Rupee = 2s. nominal English value, or 1s. 8d. intrinsic value. SILVER COINS.—1, ½, ¼ Rupee, and 10 Cent Pieces COPPER COINS.—5, 2, 1, ½ Cents.

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* Or £9791 18s. 4d., reckoning the Rupee at 1s. 11½d. sterling.

JAPAN.

The present monetary system, introduced in 1871, is based upon a gold standard, and is as follows:—

Japanese value.		*Systematic name.*		*English value.*
10 Rin	=	1 Sen	=	½d.
100 Sen	=	1 Yen	=	4s. 2d.

GOLD COINS.

20, 10, 5, 2, and 1 Yen pieces, worth respectively £4 3s. 4d., £2 1s. 8d., £1 0s. 10d., 8s. 4d., and 4s. 2d. English. They are all nine-tenths fine.

SILVER COINS.

The Yen and the 50, 20, 10, and 5 Sen pieces, worth respectively 4s. 2d., 2s. 1d., 10d., 5d., and 2½d. The Yen as originally minted weighed 412 grains. A trade Yen of 420 grains was minted from February, 1875, to November, 1878, when the coinage of it was suspended by proclamation, and the coinage of the Yen of 412 grains was resumed.

BRONZE COINS.

1 Sen, ½ Sen, 1 Rin, or $\frac{1}{10}$ Sen, worth respectively ½d., ¼d., and $\frac{1}{20}$d. English. Bronze coins are a legal tender up to, but not over, 1 Yen.

There is no coin of less value than the Rin, and lower values are expressed as fractions.

The bronze coins are composed of an alloy, consisting of 95 parts of copper to 4 of tin and 1 of zinc.

The relation of the present coins to the old ones is at the rate of 1 Yen for 1 Rio. The 50 Sen piece is equal to a Nibu; the 10 Sen piece is equal to $\frac{1}{10}$th of a Rio, and the other coins in like proportion.

STRAITS' SETTLEMENTS.

SINGAPORE, PENANG, AND MALACCA.

Penang value.		*Systematic name.*		*English value.*
100 Cents	=	1 Dollar	=	4s. 2d.*

* This value is reckoned from the exchange of Spanish Dollars for Piastres, at the rate of 100 Spanish Dollars for 121½ Piastres.

This is the nominal value of the Dollar. See p. 20 as to the annually revised rate fixed by the British Imperial Treasury.

ISLAND OF REUNION.

By decree of 2nd April, 1879, the French monetary system was adopted (see France). Previously the currency had consisted of foreign coins, including the rupee of India and its subdivisions.

SILVER COINS.

The chief silver coins are the Mexican dollar (or other dollar of equivalent value), and the Japanese Yen, each worth 4s. 2d. English, and the Rupee and the Half-Rupee of British India; there are also subsidiary coins of 20, 10, and 5 Cents, worth respectively 10d., 5d., and 2½d. English.

BRONZE COINS.

1 and 2 Cent pieces, worth respectively ½d. and 1d. English.

JAVA.

The money of Java is the same as that of Holland.

Java value.		*Systematic name.*		*English value.*
100 Cents	=	1 Guilder or Florin	=	1s. 8d.

GOLD COINS.

10 and 5 Florin pieces, equal to 16s. 6d. and 8s. 3d. English. Also the British Sovereign, at the rate of 12 Florins 40 Cents, the old Dutch ducat at 7 Florins, and the new Dutch ducat at 6 Florins, equal respectively to 11s. 6d. and 9s. 11d. English.

COURSE OF EXCHANGE.

The exchange on London at six months' sight is about 11 Florins 25 Cents for £1 sterling.

SILVER COINS.

The silver coins are the *Florin* or *Guilder*, the *Half-Guilder*, the *Quarter-Guilder*, and the *Dime* equal to 10 cents.

American dollars are accepted at 2 florins 80 cents each.

COPPER COINS.

The only copper coin is the *Cent*.

PHILIPPINE ISLANDS.

VIZ.,

LUZON (CAPITAL MANILLA), MINDANAO, PALAWON, MINDORO, PONAY, NEGOS, ZEBU, LEYTE, SAMAR, AND SMALLER ISLANDS, INCLUDING THE CATALONIANS.

Same as Spain (see p. 16), but the monetary system in use in Spain prior to Act 1868 is still employed, it is as follows:—

Philippine value.		*Systematic name.*		*English value.*
100 Cents	=	1 Real	=	2½d.
20 Reals	=	1 Piso or Hard Dollar	=	4s. 2d.

The dollar is also sometimes subdivided into 8 reals, each of 12 granos or 20 cuartos.

COURSE OF EXCHANGE.

The exchange on London is at 6 months about 49d. for a dollar, or at 30 days 47d. or 48d. for a dollar.

EGYPT.

Egyptian value.		*Systematic name.*		*English value.*
		1 Fuddah or Para	=	$\frac{1}{15}$d.
40 Paras	=	1 Piastre or Ckirsch	=	2½d.

Egyptian money is considered to be of the same value as that of Turkey, and the coins of Constantinople are current. The smallest Egyptian coin is the Fuddah. There are also pieces of 5, 10, and 20 Fuddah. The Dollar of Spain, Mexico, and South America, is also a constant medium of payment at the rate of 20 Piastres.

GOLD COINS.

The gold coins are the *Saadeyeh*, equal to 4 Piastres, and the *Kheyreeyeh*, equal to 9 Piastres.

A *Kees*, or Purse, is 500 Piastres, and a *Kazneh* is 1000 Kees or Purses.

TRIPOLI.

Tripoli value.		*Systematic name.*		*English value.*
40 Paras	=	1 Piastre	=	2½d.
20 Piastres	=	1 Mahhub	=	4s. 2d.

TUNIS.

Tunis value.		*Systematic name.*		*English value.*
3¼ Aspres	=	1 Karub	=	½d.
16 Karubs	=	1 Piastre	=	8d.

GOLD COINS.

Soultani = at its legal value 4½ Piastres.
Tunis for about 6 Piastres.

SILVER COINS.

The silver coins are the 5 *Piastre piece*, the 2 *Piastre piece* called Rialëin (= 1 Franc 60 Centimes), the *Piastre*, the *Quarter-Piastre*, the 2 *Karub piece*, and the *Karub*. The three last coins are of a very low standard, and are rather billon than silver.

COPPER COINS.

The copper coins are the *Karub* and the *Fetous* (Fetous-rekik or small money); this latter is disappearing from circulation.

ALGERIA.

Since the conquest of the country by France, in 1830, the denominations of money used in reckoning and keeping accounts have been *Francs* and *Centimes* (100 Centimes = 1 Franc) as in France (see France).

The currency of France has not yet altogether superseded the old system, and the native coins are still in circulation.

Formerly accounts were kept in *Budschus*, or *Buschus* and *Musuhns*, or *Mozounahs*. The *Buschu* is the *Pataca*, or Algerine Piastre, and the *Musuhn* is sometimes called a *Tomi n*.

Algerine value.		*Systematic name.*		*French value.*		*English value.*
24 Musuhns	=	1 Budschu	=	1 Franc 86 c's.	=	1s. 5½d.

BANK NOTES.

50 and 100 Francs.

MOROCCO.

Morocco value.		*Systematic name.*		*English value.*
		1 Flue	=	$\frac{3}{80}$d.
24 Flues	=	1 Blankeel	=	$\frac{2}{40}$d.
4 Blankeels	=	1 Ounce	=	$3\frac{7}{10}$d.
10 Ounces	=	1 Mitkul	=	3s. 1d.

54 Blankeels are considered equal to 1 Spanish Dollar, and wholesale merchants reckon by the Spanish Dollar divided into 100 Cents.

ABYSSINIA.

Abyssinian value.		*Systematic name.*		*English value.*
3 Borjooks	=	1 Kibear	=	$\frac{6}{9}$d.
10 Kibears	=	1 Divanis	=	$\frac{20}{40}$d.
4 Divanis	=	1 Harf	=	$2\frac{6}{23}$d.
23 Harfs	=	1 Pataka or Dollar	=	4s. 2i.
2¼ Patakas	=	1 Sequin	=	9s. 4½d.

This country has no coinage of its own, and large payments are usually made in gold ingots, by weight.

Since the British Expedition to Abyssinia in 1867-8 British Sovereigns and Indian Rupees have been to some extent in circulation.

WEST COAST OF AFRICA.

VIZ.,

SIERRA-LEONE, THE GAMBIA, CAPE COAST CASTLE, THE GOLD COAST.

Accounts are kept in *Shillings*, and *Pence* sterling as in Great Britain.

EAST COAST OF AFRICA.

VIZ.,

MOZAMBIQUE.

(SAME AS PORTUGAL.)

MAURITIUS.

By an order in Council of 12th August, 1876, the unit of account and standard of value is the Silver Rupee of India of 180 grains weight and $\frac{11}{12}$ths fineness, together with the half-rupee, quarter-rupee, and eight parts of a rupee, as follows :—

Mauritius value.		*Systematic name.*		*English value.*
		1 Cent	=	$\frac{1}{2}$d.
100 Cents	=	1 Rupee	=	2s. 0d.*

SILVER COINS.—The Rupee, and 50, 25, 20, 12½ and 10 Cent pieces. The 20 and 10 Cent pieces are only four-fifths fine (800 parts in 1000).

BRONZE COINS.—5, 2, and 1 Cent pieces, also the British penny, half-penny, farthing, and half-farthing rated at 4, 2, and 1 Cents respectively, and being a legal tender for any sum not exceeding half a rupee.

CAPE OF GOOD HOPE.

(SAME AS GREAT BRITAIN.)

But accounts are often still kept in the old denominations, as follows :—

6 Stivers	=	1 Schilling	=	2½d. sterling.
8 Schillings	=	1 Rixdollar	=	1s. 6d. ,,

* The above is the nominal value of the rupee; but the British Imperial Treasury annually fixes sterling rates for the issue of the rupee, in the colonies of Ceylon and Mauritius and on the East Indian Station, in payment of sums which would be paid in sterling in England. This annual revision is based upon a comparison of the average price of standard silver in the London market during the previous year. This official rate was 1s. 9d. for the year ending 31st March, 1879, and 1s. 8d. for each of the financial years 1879-80; 1880-81, and 1881-2; but the rate for adjustment of accounts between the Imperial and Indian Government for the year ending 31st March, 1881, was 1s. 8½d.

ST. HELENA.

(SAME AS GREAT BRITAIN.)

CANADA.

In British North America accounts are kept generally in *Dollars* and *Cents*, but sometimes in *Pounds*, *Shillings*, and *Pence* currency, the word currency being used to distinguish those denominations from Pounds, Shillings, and Pence sterling of Great Britain.

Canadian value.		*Systematic name.*		*Approximate British sterling value.*
10 Mills	=	1 Cent	=	½d.
100 Cents	=	1 Dollar	=	4s. 2d.
		OR,		
		1 Penny	=	½d.
12 Pence	=	1 Shilling	=	10d.
20 Shillings	=	1 Pound currency	=	16s. 8d.*

GOLD COINS.

Pieces of 2 Dollars each for Newfoundland.

SILVER COINS.

The silver coins are pieces of 1 dollar, and of 50, 25, 10, and 5 Cents.

BRONZE COINS.

1 Cent.

NOVA SCOTIA.

Nova Scotia value.		*Systematic name.*		*Approximate British sterling value.*
		1 Cent	=	½d.
100 Cents	=	1 Dollar	=	4s. 2d.
		OR,		
		1 Penny	=	½d.
12 Pence	=	1 Shilling	=	9½d.
20 Shillings	=	1 Pound	=	16s. 0d.

* Imperial accounts rendered by Army Paymasters are kept in Pounds, Shillings, and Pence sterling. It is most probable, however, that Dollars and Cents will form the only legal money of account.

NEW BRUNSWICK.

(SAME AS CANADA.)

THE BERMUDAS.

Accounts are kept in *Pounds*, *Shillings*, and *Pence* sterling, as in Great Britain.

Doubloons of Spain, Mexico, and South America, of not less weight than 17 dwts. 8 grs. Troy, are current at the rate of 64s. sterling, and Dollars of the same countries, at 4s. 2d. sterling.

All taxes and revenues are received either in British sterling money, or its equivalent in Foreign coins.

NEWFOUNDLAND.

				English value.
100 Cents	=	1 Dollar	=	4s. 2d.

GOLD COINS.—2 Dollar piece.

SILVER COINS.—50, 20, 10, and 5 Cent pieces.

UNITED STATES OF NORTH AMERICA.

American value.		*Systematic name.*		*English value.*
		1 Cent	=	½d.
100 Cents	=	1 Dollar	=	4s. 2d.

The unit of account is the *Dollar* ($); although Dollars and *Cents* are practically the only moneys of account, there are the denominations *Dimes or tenths* and *Mils* or *thousandths* of the Dollar. The Dime has its legal representative in a silver coin worth about 4·9d. sterling. There is no coin to represent the Mil, and the par value of the dollar is $49\frac{5}{10}$d.

4 Dollars 86 cents and 6½ Mils are the par value of the British sovereign or pound sterling.

GOLD COINS.

The gold coins are the *Double Eagle* of 20 Dollars; the *Eagle* (not in very general circulation) of 10 Dollars; the *Half-Eagle*; *Quarter-Eagle*; 3 *Dollar Piece*, and 1 *Dollar Piece*. The gold coins are all of the fineness of $\frac{9}{10}$ths.

SILVER COINS.

The silver coins are the silver Dollar; the Half-Dollar, or 50 Cent. Piece; the Quarter Dollar, or 25 Cent Piece; the Dime, or 10 Cent Piece; the Half-Dime, or 5 Cent Piece; and the 3 Cent Piece.

BRONZE COINS.

The bronze coins are the Cent and the Half-Cent Pieces.

MEXICO.

Mexican value.		*Systematic name.*		*English value.*
100 Cents	=	1 Dollar	=	4s. 2d.

GOLD COINS.

The gold coins are the *Doubloon* nominally equal to 16 (but really to about 15½) silver Dollars; the *Half-Doubloon*; *Quarter-Doubloon*, and 2 *Dollar Piece*.

SILVER COINS.

The silver coins are the Dollar; Half-Dollar; the *Peseta de Columnas* (25 cents), or Quarter-Dollar (12½ cents); *Real* of Mexican plate; and the *Half-Real*.

COPPER COINS.

The copper coins are the *Quartillo* (3½ cents), and the *Ochavo* or *Claco* ($1\frac{2}{16}$ cents.)

WEST INDIES. (British).

Accounts are kept sometimes in *Pounds*, *Shillings*, and *Pence* sterling, as in Great Britain, and sometimes in *Dollars* and *Cents* as follows:—

100 Cents = 1 Dollar = 4s. 2d. English value.

GOLD COINS.

The gold coins are the *English Sovereign*, and *Half Sovereign*, *Spanish*, *Mexican*, and *Columbian Doubloons*, *United States' Eagle*, *Half Eagle*, *Quarter Eagle*, *Two Dollar Piece*, *One Dollar*, and *Quarter Dollar*, and the *Californian Twenty Dollar-piece*. The *Old Pistole* (value £1 6s. 8d.) is sometimes met with.

SILVER COINS.*

The silver coins are the *Crown*, *Half-Crown*, *Florin*, *Shilling*, *Sixpence*, *Fourpence*, *Threepence*, *Twopence*, and the *Quattie*. The *Dollar*, *Half-Dollar*, and *Quarter-Dollar* of the *United States*, *Spain*, *Mexico*, and *South America*.

NICKEL COINS.

There are in Nickel, pence and half-pence coined at the British Mint, and of the same value as the bronze pence and half-pence.

BRONZE COINS.

The bronze coins are the British *Penny*, *Half-penny*, and *Farthing*.

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* The following old silver pieces were formerly current:—The Macaroni nominally 1s. 8d., but worth only 1s.; the Tenpenny piece nominally 10d., but worth only 6d.; the Bitt nominally 7½d., but worth only 4½d.; the Fivepenny piece nominally 5d., but worth only 3d.; the Quattie nominally 2½d. but worth only 1½d. The Tenpenny piece, the Bitt, and the Quattie, were frequently cut pieces of the Macaroni; even now the country negroes count their money in Bitts. They also talk of the Macaroni or Mac. In St. Kitts there was formerly a currency of colonial silver coins of the anchor design, namely, pieces of $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{9}$ and $\frac{1}{16}$ of a dollar. They were issued in 1822, and withdrawn from circulation in 1880. The design on the obverse was a shield with the arms of Great Britain and Hanover and the inscription "Georgius IV., &c." The design on the reverse was an anchor under a crown with the date and the inscription "Colonial Britan. Monet.," and on either side of the anchor and crown the figures II., IV., VIII., or XVI, according to the portion of the dollar represented by the coin.

BANK NOTES.

The colonial Bank issues notes of £10, £5, and £1, which are exchangeable for gold or silver at their full nominal value. Formerly the local Government issued Bank Notes at 12s. each, but these have been long since re-called; afterwards the planters and Colonial Banks issued notes of £10, £5, and £1, but the Colonial Banks' Notes are now the only ones in circulation.

HAYTI (or Hispaniola, or St. Domingo.)

Accounts are kept in current *Dollars* (called *Gourdes*) and *Cents*.

Haytian value.		*Systematic name.*		*English value*
		1 Cent	=	$\frac{1}{3\frac{1}{3}}$d.
100 Cents	=	1 Gourde, or Dollar	=	3½d.

The native currency consists of Depreciated Paper Gourdes, and of one and 2 cent pieces in copper.

COLOMBIA (United States of.)

Colombian value.		*Systematic name.*		*English value.*
100 Centavos	=	1 Dollar, or Peso	=	4s. 2d.

GOLD COINS.

Double Condor, of 20 pesos; and *Condor*, of 10 pesos = respectively 100 francs and 50 francs French; or £3 19s. 2d. and £1 19s. 7d. English.

SILVER COINS.

Peso, 2 *decimos*, 1 *decimo*, and ½ *decimo* = respectively to 5, 2, 1, and ½ franc French; or 3s. 11½d., 1s. 8d., 10d., and 5d. English.

GUIANA (British).

Guiana value.		*Systematic name.*	*Value in British sterling money.*
100 Cents	=	1 Dollar	= 4s. 2d.

The current coins are those of Great Britain, Spain, United States of America, and the South American Republic.

VENEZUELA.

The monetary unit of account is the *Venezolano*.

100 Centavos = 1 Venezolano = 4s. 2d. English.

GOLD COINS.

20, 10, 5, and 1 Venezolanos = respectively 100, 50, 25, and 5 French francs; or, £3 19s. 2d., £1 19s. 7d., £1, and 4s. 2d. English.

SILVER COINS.

1 Venezolano; ½ Venezolano; or 5 Decimos; 2 Decimos; 1 Decimo; and 5 Centavos.

BRONZE COINS.

2 and 1 Centavo pieces.

BRAZIL.

The monetary system is the same as that of Portugal.

GOLD COINS.

20, 10, and 5 Milreis.

SILVER COINS.

2 and 1 Milreis and 500 Reis.

COPPER COINS.

40, 20, and 10 Reis.

The currency is chiefly a depreciated paper money, consisting of Notes for a Milreis (1$000) and upwards. The value of a paper Milreis is now (1882) about 1s. 2d. British sovereigns are a legal tender at the rate of 8889 reis each.

PERU.

Peruvian value.		*Systematic name.*		*English value.*
100 Centesimos	=	1 Dollar, or Sol	=	3s. 0d.

GOLD COINS.

20, 10, and 5 Sols, and 1 Sol.

SILVER COINS.

1 Sol; 50 and 20 Centesimos; 1 Dinero, or 10 Centesimos; ½ Dinero, or 5 Centesimos.

CHILI.

Chilian value.		*Systematic name.*		*English value.*
100 Centavos	=	1 Dollar, or Peso	=	3s. 9d.

GOLD COINS.

The gold coins are the *Condor* (10 dollars); the *Doblon* (5 dollars); the *Escudo* (2 dollars); and the *Peso* (or dollar). The gold coins are all $\frac{9}{10}$ths fine.

SILVER COINS.

The Dollar; Half-Dollar, or 50 Centavos; and pieces of 20, 10, and 5 Centavos. The silver coins also $\frac{9}{10}$ths fine.

COPPER COINS.

The copper coins are the *Centavo* and the *Half Centavo*.

BOLIVIA.

Accounts are kept in *Dollars* and *Centimes*, as follows:—

Bolivian value.		*Systematic name.*		*English value.*
100 Centimes	=	1 Dollar	=	3s. 1d.*

* This value is taken from the quoted exchanges, and refers to the old currency of Bolivian Dollars.

COINS.

The current coins are gold Doubloons and silver Dollars and their subdivisions. The Bolivian Silver Dollar, when of full weight and fineness is worth 4s. 2d. sterling, but for many years the coins issued from the Potosi Mint (with the exception of the Dollar) have all been 25 per cent below the standard. This circumstance has reduced the exchange value of the Bolivian currency to about 3s. 1d. sterling per Dollar.

ARGENTINE REPUBLIC.

The law of the 16th September, 1879, laid the foundation of a national coinage for the whole of the Argentine Republic, as follows:—

100 Centesimos = 1 Dollar = 4s. 2d. English value.

Gold Coins.—(None provided in the law).

Silver Coins.—Dollar; and 50, 20, and 10 centime pieces all of the fineness of 900 parts of silver to 100 parts of copper. Silver coins are a legal tender up to ten dollars. The dollar weighs 25 grammes, and 50 and 20 cent pieces weigh respectively 12½ and 5 grammes.

Nickel Coins.—Pieces of 5 and 2 cents. They are minted from a composition of 85 parts of copper to 15 parts of nickel; the 5-cent piece weighs 10 grammes, and the 2-cent piece 4 grammes.

Bronze Coin.—The cent, weighing 5 grammes, is composed of 95 parts of copper to 4 of tin and 1 of zinc. Copper coins are a legal tender up to 1 dollar.

Formerly the Argentine Republic had no general currency. Each province * had a local currency of its own. Up to 1873 the Republic used—

1. Paper dollar (patacan) of Buenos Ayres.
2. Peso Plata of 17 to the Onza de oro.
3. Peso Fuerte or Hard Dollar of 16 to the Onza de oro.
4. Onza de oro, equal to about 65 Shillings sterling.

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* The Provinces of the Republic are Buenos Ayres, Entre-Rios, San Luis, Corrientes, Santa Fè Cordova, Santiago, Tucuman, Catamarca, Rioja, San Juan, Mendoza, Salta, and Ju Juz.

But there was no fixed standard and no actual national coinage; and as the constitution of 1860 had taken from the provinces the right to coin money it was necessary to grant circulation to foreign coins at a fixed tariff.

The law of 1875 authorized the minting of gold and silver Argentine coins, and fixed a proportion of silver and gold at 16·266 to 1. The peso fuerte, weighing 1⅛ grammes $\frac{9}{10}$ths fine, was made the unit of account, and £1 sterling was declared equal to 4·88 pesos fuertes.

In the province of Buenos Ayres, in 1877, almost all payments were made in gold or paper money (at that time inconvertible), and silver was rarely used in large monetary transactions.

In the northern provinces of the Republic, and in Entre Rios and Corrientes, silver up to that time had been the basis, the Bolivian dollar $\frac{9}{10}$ths fine being taken as the unit, and forming the money of account. The coin by which this system was represented was the half-dollar or *cuarto* (4 real piece, the dollar being 8 reals) a coin of low and irregular standard. When the law of 1875 came into force the *cuarto* was the chief current coin of the Republic, but it was not tariffed, and doubtless was intended to be displaced by the peso fuerte.

By decree of March, 1877, the following rates were assigned to the undermentioned silver coins in circulation in the Argentine Republic:—

	Weight in Grammes.	Fineness in 1000 parts	Argentine Tariff value.	
			Dollar.	Cent.
Chilian Dollar	25	900	0	88
Peruvian Sol	25	,,	0	88
Bolivian Dollar	20	,,	0	69
Bolivian 20 cent piece ..	4·500	,,	·0	15
½ Bolivian andChilian Dollar, 1864 or 1866	5	,,	0	17

When the provinces were all very much independent, Buenos Ayres from its maritime position was the leading one.

In the year 1857, the Buenos Ayres Government made the gold Doubloon, at the rate of 17 to the Patacon, the chief monetary unit, and divided the Dollar into 100 parts. Previous

to that time accounts were kept in *Dollars*, *Reals*, and *Quartos*.

The gold coins in circulation were *Doubloons* of Mexico, Peru, and Chili, at the rate of 16 silver Dollars each; the *Double Eagle*, the *Eagle*, the *Half-Eagle*, the *Quarter-Eagle*, and the 3 *Dollar Piece* of the United States of North America, at par; the British *Sovereign*, at 4 Dollars 88 cents.; the British *Half-Sovereign*, at 2 Dollars 40 cents; the *French Napoleon*, at 3 Dollars 90 cents, and the Chilian *Condor* at 9 Dollars 20 cents.

The following silver coins were occasionally met with in the circulation, but their amount was very limited:—The Spanish *Real*, and 2 *Real*, and 4 *Real Pieces*, the 1, ½, and ¼ *Bolivian Dollar Pieces*, *Peruvian* and *Chilian Dollars*.

COPPER COINS.

Centesimo, ½d. sterling.

BANK NOTES.

The paper money in circulation consists of Notes of 5, 10, 20, 50, 100, 500, and 1000 Dollars.

URUGUAY. (Montevideo).

The unit of account is the *Current Dollar* of 10 Reals, each Real being divided into 100 Centesimos; it is only a money of account, there being no coin to represent it; but 6 current Dollars are about equal to 5 *Specie* Dollars.

The current coins are Gold Doubloons, Silver Dollars, and their subdivisions.

PARAGUAY.

Accounts are kept in Dollars of 100 Centesimos, and the currency is the same as that of Bolivia. In lieu of the Bronze coins of 10 and 5 Centesimos, a Nickel coinage was proposed in 1875.

FALKLAND ISLANDS.

(SAME AS GREAT BRITAIN).

NEW SOUTH WALES.

(VICTORIA, SOUTH AUSTRALIA, WEST AUSTRALIA, TASMANIA, OR, VAN DIEMEN'S LAND).

(SAME AS GREAT BRITAIN.)

NEW ZEALAND.

(SAME AS GREAT BRITAIN.)

THE SANDWICH ISLANDS.

The British denominations of *Pounds*, *Shillings*, and *Pence* sterling (see p. 2) have been declared the official moneys of account for the whole kingdom. But merchants almost always keep their accounts in Dollars and Cents, or Dollars and Reals, as follows:—

Hawaian value.		*Systematic name.*		*English value.*
100 Cents, or 8 Reals	=	1 Dollar	=	4s. 2d.

The currency consists of coins of other countries to which are assigned rates fixed by custom, and by the rates at which the Government receives them in payment of duties and taxes.

WEIGHTS AND MEASURES.

THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

I.—IMPERIAL MEASURES OF LENGTH.

English value.	*Systematic name.*		*Metric Equivalent.*
			Centimetres.
12 Inches	= 1 Foot	=	30·4794
3 Feet	= 1 Yard	=	91·4383
			Metres.
2 Yards	= 1 Fathom	=	1·82877
5½ Yards	= 1 Pole, or Rod	=	5·02911
4 Poles, or 100 Links, or 22 Yards	= 1 Chain	=	20·11644
40 Poles, or 220 Yards	= 1 Furlong	=	201·16437
8 Furlongs, or 1760 Yards	= 1 Mile*	=	Kilometres. 1·60931

II.—IMPERIAL MEASURES OF SURFACE.

English value.	*Systematic name.*	*Metric Equivalent.*
		Square Decimetres.
144 Sq. Inches	= 1 Sq. Foot	= 9·28997
		Square Metre.
9 Sq. Feet	= 1 Sq. Yard	= ·836097
30¼ Sq. Yards, or 272¼ Sq. Feet	= 1 Sq. Rod, Pole or Perch	= 25·291939
		Ares.
40 Poles	= 1 Rood	= 10·116775
4 Roods, or 4840 Sq. Yards	= 1 Acre	= Hectare. ·40467
640 Acres or 1 Square Mile		= 258·98945

* A nautical Mile is about 1 1-sixteenth Mile, or about 1,870 Yards.

III.—IMPERIAL MEASURES OF CUBIC CAPACITY.

English value.	*Systematic name.*	*Metric Equivalent*
	1 Cubic Inch =	Cubic Centimetres. 16·38618
1728 Cubic Inches =	1 Cubic Foot =	Cubic Decimetres 28·31531
27 Cubic Feet =	1 Cubic Yard =	Cubic Metres. ·764513

IV.—IMPERIAL MEASURES OF CAPACITY FOR LIQUIDS AND DRY GOODS.

English value.	*Systematic name.*	*Metric Equivalent.*
		Millilitres. Litres.
8·665 Cubic Inches	= 1 Gill =	141·983 or ·14198
4 Gills	= 1 Pint =	567·932 or ·567932
2 Pints	= 1 Quart =	1·13587
4 Quarts	= 1 Gallon =	4·5434587
2 Gallons	= 1 Peck =	9·08692
4 Pecks (8 Gallons)	= 1 Bushel =	36·3477
		Hectolitres.
8 Bushels	= 1 Quarter =	2·90781

VI.—MEDICAL SUBDIVISIONS OF THE IMPERIAL PINT.

English value.	*Systematic name.*	*Metric Equivalent.*
		Millilitres.
60 Minims	= 1 Fluid Drachm (f. ʒ.) =	3·5495765625
8 Fluid Drachms	= 1 Fluid Ounce (f. ȝ.) =	28·39661251
		Litres.
20 Fluid Ounces	= 1 Imperial Pint (O.) =	·567936
8 Pints	= 1 Gallon =	4·543487

A fluid ounce contains 437·5 grains weight or $\frac{1}{160}$ Imperial gallon of distilled water at a temperature of 62° Fahrenheit, and with the barometer at 30 inches.

VII.—WEIGHTS.—(*a.*) AVOIRDUPOIS WEIGHTS.

English value.	*Systematic name.*	*Metric Equivalent.*
		Grammes.
$27\frac{11}{32}$ Troy Grains	= 1 Dram (dr.) =	1·7718476
16 Drams	= 1 Ounce (oz.) =	28·34954
16 Ounces (or 7000 Troy Grains	= 1 Pound (lb.) =	453·59265
		Kilogrammes.
14 Pounds	= 1 Stone =	6·350302
28 Pounds	= 1 Quarter (qr.) =	12·700604
* 100 Pounds	= 1 Cental or New Hundredweight =	45·35925
4 Quarters (or 112 lbs.)	= 1 Hundredweight (cwt.) =	50·80238
20 Hundredweight	= 1 Ton =	1016·04754

* *The Cental was* approved by an Order in Council of 4th Feb., 1879.

(*b*) TROY WEIGHT.

English value.	*Systematic name.*	*Metric Equivalent*
		Grammes.
24 Grains	= 1 Pennyweight (dwt.)	= 1·555176
20 Pennyweights	= 1 Ounce or Carat (oz.)	= 31·10396
12 Ounces	= 1 Pound (lb.)	= 373·24224

This weight is used for gold, silver, and precious stones, and in philosophical experiments.

(*c*) JEWEL WEIGHT.

		Grammes.
240 Grains (gold or silver)	= 1 Carat	= 15·5176
24 Carats	= 1 Pound (lb.)	= 373·24224

(*d*) DIAMOND AND PEARL WEIGHT.

		Milligrammes.
16 Parts	= 1 Grain	= 64·799
4 Grains	= 1 Carat	= 259·196
		Grammes.
151½ Carats, or 600 Grs.	= 1 Ounce Troy	= 31·10352

(*e*) NEW APOTHECARIES' WEIGHT. Introduced in 1864).

			Grammes.
437½ Grains	=	1 Ounce (oz.)	= 28·34956
16 Ounces	=	1 Pound (lb)	= 453·593

OLD APOTHECARIES' WEIGHT. (Superseded in 1864.)

			Grammes.
20 Grains	=	1 Scruple (℈)	= 1·29598
3 Scruple	=	1 Drachm (ʒ)	= 3·88794
8 Drachms	=	1 Ounce (℥)	= 31·10352
12 Ounces	=	1 Pound (lb.)	= 373·24224

IRELAND.

MEASURES OF LENGTH.

Irish value.	*Systematic name.*	*Metric value*
		Centimetres.
12 Inches	= 1 Foot	= 30·4094
3 Feet	= 1 Yard	= 91·4383
		Metres.
7 Yards	= 1 Perch	= 6·400681
40 Perches	= 1 Furlong	= 256·02724
		Kilometres.
8 Furlongs	= 1 Mile	= 2·0482178

The Irish Mile of 320 Perches or 2,240· Yards = 2·048 French Kilometres, and 5¼ Irish Miles = 7 English Miles, or 11 Irish Miles = 14 English Miles.

			Metres.
A Perch in Burleigh or Woodland Measure is	6 Yds.	=	5·486298
,, Cunningham ,,	6¼ ,,	=	5·714894
,, Irish ,,	7 ,,	=	6·400681
,, Forest ,,	8 ,,	=	7·315064

MEASURES OF SURFACE.

Irish value.		*Systematic name.*		*Equivalent Value in the Metric System.*
				Ares.
144 Sq. Inches	=	1 Sq. Foot	=	·000929
9 ,, Feet	=	1 ,, Yard	=	·008361
49 ,, Yards	=	1 ,, Perch	=	·409687
40 Perches	=	1 Rood	=	16·38748
4 Roods	=	1 Acre	=	65·54992

In Irish Surface Measure, or, as it is also called, Irish Plantation Measure, 121 Acres are equal to 196 British Acres.

36 Acrs. Irish Msre.	=	49 Acrs.	Burleigh or Woodld.	Msre.
64 ,, ,,	=	49 ,,	Forest	Measure.
625 ,, ,,	=	784 ,,	Cunningham	,,
121 ,, ,,	=	196 ,,	British Statute	,,
1369 ,, ,,	=	1764 ,,	Scotch	,,

The above numbers are found by multiplying together the number of yards in a perch in the different kinds of measure. Thus, the Irish perch = 14 half yards, the English perch = 11 half yards; hence 14 × 14 = 196 and 11 × 11 = 121. The chain in Scotland is 74-ft., and the chain in Ireland is 84-ft.; hence (74 + 2) × (74 + 2) = 1369, and (84 + 2) × (84 + 2) = 1764, the equivalent number of Irish and Scotch Acres.

The following table will be found useful in reducing Irish Land Measurement to English, Scotch, Woodland, Forest, or Cunningham Surface or Land Measure.

As an instance of the method of using this table, let it be required to find the value of 9,736 Irish acres and English acres. Add together 9 times the numbers in the fourth line, 7 times the numbers in the third line, 3 times the number in the second line, and 6 times the numbers in the first line:—

English.	*Forest*	*Woodland*	*Cunningham*	*Scotch*
a. r. p. 10ths	*a. r. p. 10ths*	*a. r. p. 10ths*	*a. r. p. 10ths*	*a. r. p. 10th*
1 2 19 2	0 3 2 5	1 1 17 8	1 1 0 7	1 1 6 2
16 0 31 7	7 2 25 0	13 2 17 8	12 2 7 0	12 3 21 6
161 3 37 4	76 2 10 0	136 0 17 8	125 1 30 4	128 3 16 5
1619 3 13 6	765 2 20 0	361 0 17 8	1254 1 24 0	1288 2 5 1

TABLE OF IRISH LAND MEASURE REDUCED TO IMPERIAL.

Irish		*Imperial*				*Irish*		*Imperial.*			
a.		*a.*	*r.*	*p.*	*y.*	*a.*		*a.*	*r.*	*p.*	*y.*
1	=	1	2	19	5¼	28	=	45	1	16	26
2	=	3	0	38	10½	29	=	46	3	36	1
3	=	4	3	17	15¾	30	=	48	2	15	16¼
4	=	6	1	36	21	31	=	50	0	34	11½
5	=	8	0	15	26¼	32	=	51	3	13	6¾
6	=	9	2	35	1¼	33	=	53	1	32	22
7	=	11	1	14	6½	34	=	55	0	11	27¼
8	=	12	3	33	11¾	35	=	56	2	31	2½
9	=	14	2	12	17	36	=	58	1	10	7¾
10	=	16	0	31	22¼	37	=	59	3	29	12¾
11	=	17	3	10	27¼	38	=	61	2	8	18
12	=	19	1	30	2¼	39	=	63	0	27	23¼
13	=	21	0	9	7¾	40	=	64	3	6	28¾
14	=	22	2	28	13	41	=	66	1	26	3¼
15	=	24	1	7	18½	42	=	68	0	5	8¾
16	=	25	3	26	23½	43	=	69	2	24	14
17	=	27	2	5	28¾	44	=	71	1	3	19¼
18	=	29	0	25	3¾	45	=	72	3	22	24½
19	=	30	3	4	9	46	=	74	2	1	29¾
20	=	32	1	23	14¼	47	=	76	0	21	4¾
21	=	34	0	2	19½	48	=	77	3	0	10
22	=	35	2	21	24¾	49	=	79	1	19	15½
23	=	37	1	0	30	50	=	80	3	38	20½
24	=	38	3	20	5	100	=	161	3	37	10¾
25	=	40	1	39	10½	200	=	323	3	34	21½
26	=	42	0	18	15¾	300	=	485	3	32	2
27	=	43	2	37	20¾	500	=	809	3	26	23½

CUBIC, OR SOLID MEASURES.

French value.		*Systematic name.*		*English value.* Cubic Feet
$\frac{1}{10}$th of a Stere	=	1 Decistere	=	3·531741
10 Decisteres	=	1 Stere	=	35·31714
10 Steres	=	1 Decastere	=	353·1714

MEASURES OF CAPACITY.

French value.		*Systematic name.*		*English value.* Minims
1000th of a cubic Decimetre	=	1 Millilitre	=	16·9034247744 Fluid Drachms
10 Millimetres	=	1 Centilitre	=	2·8172374624 Imperial Pints
10 Centilitres	=	1 Decilitre	=	·1 6077339525
10 Decilitres	=	1 Litre	=	1·76077339525 Imperial Gallons
10 Litres	=	1 Decalitre	=	2·2009667440625 Imperial Bushels
10 Decalitres	=	1 Hectolitre	=	2·751208430078125
10 Hectolitres	=	1 Kilolitre	=	27·51208430078

TABLE OF WEIGHTS.

French value.		*Systematic name.*		*English value.* Grains Troy		
1000th of a Gramme	=	1 Milligramme	=	·015432349		
10 Milligrammes	=	1 Centigramme	=	·154323488		
10 Centigrammes	=	1 Decigramme	=	1·54323488		
10 Decigrammes	=	1 Gramme	=	15·4323488		
10 Grammes	=	1 Decagramme	=	154·323488		
				Oz.	Drams	Av.
10 Decagrammes	=	1 Hectogramme	=	3	8·4383	
				lbs.	oz.	Drams
10 Hectogrammes	=	1 Kilogramme	=	2	3	4·3830
				lbs. av.		
10 Kilogrammes	=	1 Myriagramme	=	22·0466		
10 Myriagrammes	=	1 Quintal Metrique	=	220·466		
10 Quintals	=	1 Ton or Millier	=	2204·66		

The old system of money, weights and measures used in France prior to the introduction of the Metric system is as follows:—

Old French value		*Systematic name*		*Metric value* Millimetres		*English value* Inches
		1 Point	=	0·188	=	·007
12 Points	=	1 Ligne	=	2·256	=	·09
12 Lignes	=	1 Pouce	=	27·072	=	1·09
				Metres		
12 Pouces	=	1 Pied	=	0·32484	=	12·7892
						Feet
6 Pieds	=	1 Toise	=	1·94904	=	6·562
				Kilometres		Miles
2280 Toises	=	1 Lieu Commune de terrestre, *i.e.* the 25th part of a degree, or a Lieu Geographique	=	4·444	=	2·761421
2850 Toises	=	1 Lieu Marine (or 20th part of a degree)	=	5·555	=	3·4517

The Lieu Metrique is only 4000 metres.

The Aune employed for measuring cloth, linen, and woven goods generally had a length of 3 pieds, 7 pouces, 10 lignes, 10 points, or 1·18845 mètre. It was divided into *halves* (*demies*), *thirds* (*tiers*), *quarters* (*quarts*), *sixths* (*sixièmes*), *eighths* (*huitièmes*,) and *sixteenths* (*seizièmes*).

WEIGHTS.

Old French value.		*Systematic name.*		*Metric value* Grammes		*English value* Troy Grains
		1 Grain	=	·053	=	·8196
72 Grains	=	1 Gros	=	3·824	=	59·0113
8 Gros	=	1 Once	=	30·594	=	472·1372
				Kilogrammes		lbs. Av.
8 Onces	=	1 Marc	=	0·244755	=	·53959
						or 8·633 oz.
2 Marc	=	1 Livre-poids	=	0·48951	=	1·07918

MONEY.

Old French value.		*Systematic name.*		*Metric value.*		*English value*
		1 Denier	=	$\frac{1}{240}$ Francs	=	$\frac{1}{20}$d.
3 Deniers	=	1 Liard	=	$\frac{1}{80}$,,	=	$\frac{3}{20}$
4 Liards	=	1 Sou	=	$\frac{1}{20}$,,	=	$\frac{3}{5}$
20 Sous	=	1 Livre-tournois	=	$\frac{20}{21}$* ,,	=	$9\frac{3}{21}$

* In other words, 21 Livres-tournois = 20 Francs.

*RUSSIA.

MEASURES OF LENGTH.

Russian value.		*Systematic name.*		*English value.*
8 Vershoks	=	1 Stopa	=	14 Inches.
2 Stopas, or 16 Vershoks	=	1 Arschine †	=	28 „
3 Arschines	=	1 Saschen	=	7 Feet.
500 Saschens	=	1 Verst	=	5⅓ Furlongs.

MEASURES OF SURFACE.

Russian value.		*Systematic name.*		*English value.*
9 Sq. Archines	=	1 Square Sachine	=	784 Square Inches.
2400 Sq. Sachines	=	1 Desatine	=	13067 Square Yards.

The *Desatine* is equal to 2 Acres 2 Roods 32 Poles, English.

MEASURES OF CAPACITY FOR LIQUIDS.

Russian value.		*Systematic name.*		*English value.*
		1 Tscharkey	=	·86 Gill., nearly.
100 Tscharkeys	=	1 Vedro	=	2·7049 Imperial Gallons.
3 Vedros	=	1 Anker	=	8·1147 „ „
40 Vedros	=	1 Sarokowaja	=	108·196 „ „

MEASURES OF CAPACITY FOR DRY GOODS.

Russian value.		*Systematic name.*		*English value*
		1 Garnietz	=	5·7696 Imperial Quarts.
2 Garnietz	=	1 Tschetwerka	=	1·4424 Imperial Gallons.
4 Tschetwerkas	=	1 Tschetwerik	=	2·8852 Pecks.
2 Tschetweriks	=	1 Pajak	=	1·4426 Bushels.
2 Pajaks	=	1 Osmin	=	2·8852 „
2 Osmins	=	1 Tschetwert	=	5·7704 „
16 Tschetwerts	=	1 Last	=	11·5408 Imperial Quarters.

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* In the summer of 1869 a Commission of the Imperial Academy of Science at St. Petersburgh, issued a report on the construction of primary international standards of weights and measures. They were of opinion that the French Metric system, which had been tacitly recognized by all civilised nations, would afford the advantages of a universal system of weights and measures. They proposed that an international commission should be nominated, composed of delegates from all civilised countries, for the construction and verification of primary international standards of measures of length, weight and capacity, as the basis on which a universal system might be definitely established, and also for the construction and verification of copies of these primary standards for the several countries.

† Used in Cloth Measure.

WEIGHTS.

Russian value.	*Systematic name.*	*English value.*
		Dwts. Grs. Troy
96 Dolis	= 1 Zolotnick	= 2 17$\frac{1}{2}$
3 Zolotnicks	= 1 Lotti	= 8 5$\frac{1}{2}$
		Ounces Avr.
8 Zolotnicks	= 1 Lana	= 1$\frac{1}{2}$
12 Lanas or 32 Lotti	= 1 Funt (Pound)	= 14$\frac{1}{2}$*
		Qr. lbs.
40 Funts	= 1 Pud (or Pood)	= 1 8$\frac{1}{10}$†
		Cwts. qrs. lbs.
10 Puds	= 1 Berkovitz	= 3 0 25$\frac{1}{10}$‡
3 Berkovits	= 1 Packen	= 9 2 19$\frac{1}{2}$

AUSTRO-HUNGARIAN EMPIRE.

In accordance with the law of 23rd July, 1871, the Metric system (see *France*) was introduced; it was made permissive from 1st January, 1873, and compulsory from 1st January, 1876; since the latter date, the only legal weights and measures in trade and commerce have been as follows:—

MEASURES OF LENGTH.

The Meter (which is the unit), divided into 10 Decimeters or 100 Centimeters, or 1,000 Millimeters; the Kilometer of 1,000, and the Myriameter of 10,000 Meters.

COMPARISON OF OLD AND NEW MEASURES OF LENGTH.

			English value.
1 Meter	=	0·5272916 Vienna Klafter	= 39·37079 inches
1 ,,	=	3 Fuss 1 Zoll 11·58 Linien	= 3 ft. 3·37079 ,,
1 ,,	=	1·286077 Ellen	= ,, ,,

* More exactly 14·445088 ounces.
† More exactly 36·112739 lbs.
‡ More exactly 361·12739 lbs.

1 Kilometer	= 0·131823 Austrian Post Mile	=	1093·6330 yds.
1 Myriameter	= 1·318229 ,,	=	6 m. 367·308
1 Centimeter	= 0·94912 Faust or hand-breadth (for horse measure)	=	·3937 inch
1 Vienna Klafter	= 1·896484 Meter	=	2.0742 yards
1 Fuss	= 0·316081 ,,	=	1·0371 foot
1 Elle	= 0·777558 ,,	=	30·61307 inches
1 Faust	= 10·53602 Centimeters	=	4·14811 ,,
1 Post Mile (of 4000 Klafter)	= 7·585936 Kilometers 0·758593 Myriameters	=	4·71376 m., or 4 miles and 1256·230366928 yards, or 4⅛ miles nearly

MEASURES OF SURFACE.

The general surface measures are the squares of the measures of length; the special surface measures for land are as follows:—

The *Ar* of 100 square meters; the *Hektar* of 100 Ar, and the square meter.

COMPARISON OF AUSTRIAN OLD AND NEW SURFACE OR SQUARE MEASURES AND THEIR ENGLISH VALUE.

		English value
1 Square Meter	= 0·278036 Sq. Klafter	= 10·7643 sq. ft
1 ,, ,,	= 10·01931 Sq. Fuss	= 10·7643 sq. ft
1 Ar	= 27·80364 Sq. Klafter	= 3·9538 poles
1 Hektar	= 1·737727 Joch	= 2·47114 acres
1 Sq. Myriameter	= 1·737727 Sq. Mile	= 24711·431 ,,
1 Square Klafter	= 3·596652 Sq. Meters	= 4·30171 sq. yds
1 ,, Fuss	= 0·09907 Sq. Meters	= 1·075428 ,, foot
1 Joch	= ·5754642 Ar	= 1·42521 acres
1 Joch	= 0·5754642 Hektar	=
1 Mile	= ·5754642 Sq. Myriameter	=

CUBIC MEASURES.

		English value
1 Kubik Meter	= 0·146606 Kubik Klafter	= 35·31658 cubic ft
1 ,,	= 31·66635 Kubik Fuss	= 1·30802 ,, yd
1 Kubik Klafter	= 6·820992 Kubik Meter	= 240·89410 ,, ft
1 *Kubik* Fuss	= 0·03157867 ,, ,,	= 1·11525 ,, ft

HOLLOW MEASURES OF CAPACITY FOR DRY GOODS.

		English value
1 Hectoliter	= 1·6226365 Metzen	= 0·344131 Quarter
1 Liter	= 0·01626365 Metzen	= 0·88097 Quarts
1 Vienna Metze	= 0·6148682 Hectoliter	= 1·69273 Bushels
1 ,, ,,	= 61·48682 Liters	= 0·21159 Quarter
1 ,, Muth	= 18·44604 Hectoliters	= 6·34774 ,,

The Muth was 30 Metzen, the Metze 4 Viertel or 8 Achtel, or 16 Muhlmassel or 32 Futtermassel or 128 Becher; and each becher was divided into 8 probmetzen.

HOLLOW MEASURES OF CAPACITY FOR LIQUIDS.

		English value.
1 Liter	= 0·7068515 Vienna Mass	= 1·761954 Pints
1 Hectolitre	= 1·767129 Vienna Eimer	= 22·02443 Gallons
1 Vienna Eimer	= 0·56589 Hectolitre	= 12·4572 ,,
1 Vienna Mass	= 1·414724 Liter	= 1·24633 Quarts

The Fuder was 32 Eimer; the Eimer was 4 Viertels; each Viertel was 10 Mass; each Mass was 2 Kannen; each Kanne was 2 Seidel, and each Seidel was 2 Pfiff. The Seidel was equal to 0·6232 Imperial pint English or a little over half a pint.

WEIGHTS.

		English value
1 Gramm	= 0·06 Post Loth	= 15·432348 grs. Troy
1 ,,	= 4·855099 Vienna Karats	= ,, ,,
1 ,,	= 0·286457 Ducat (gold weight)	= ,, ,,
1 Dekagramm	= 0·571367 Loth	= 154·323488 ,,
1 Kilogramm	= 1·785523 Vienna Pfund	= 2 lb. 3 oz. 4·383 drs.
1 ,,	= 1 Pfund 25·137 Loth	= 2·20462 lbs. Avoir.
1 ,,	= 2 Zollpfund	= ,, ,,
1 ,,	= 2·380697 Apothecaries' Pfund	= ,, ,,
1 ,,	= 3·562928 Vienna Marks (silver weight)	= ,, ,,
1 Vienna Pfund	= 0·560060 Kilogramm	= 1·2347 lbs. Av.
1 ,, Centner	= 56·006 ,,	= 123·47201 ,,

1 „ Loth	= 1·750187 Dekagramm	= 9·87749	drachms.
1 Zoll Centner	= 50 Kilogramms	= 110·233	lbs. Av.
1 Zoll Pfund	= 500 Gramms	= 1·10231	„
1 Apothecaries' Pfund	= 420·045 Gramms	= ·926039	„
1 Vienna Mark (silver weight)	= 380·66 „	= 0·61876	„
1 Vienna Ducat (gold weight)	= 3·490896 „	= 53·86839	grains Troy
1 Vienna Karat	= 0·205969 „	= 3·17858	„
1 Post Loth	= 16·666657 „	= 257·20586	„

GERMAN EMPIRE.

METRIC MEASURES OF LENGTH.

The Meter or Stab is the unit; its divisions and multiples are as follows:—

			English value Inches.
	1 Millimeter or Strich*	=	·03937079
10 Millimeters	= 1 Centimeter	=	·3937079
10 Centimeters	= 1 Dezimeter	=	3·937079
10 Dezimeters	= 1 Meter or Stab*	=	39·37079
10 Meters or Stab	= { 1 Dekameter or Kette* (Chain) }	=	10 yds. 2ft. 3·37079
1000 „	1 Kilometer	=	1093 „ 1 „ 10·79
1500 „	1 Mile	=	1640 „ 0 „ 4·185

The relative value of the Meter or Stab and the Fuss (of the old system) in the several States of the German Empire is shown in the following table:—

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* The Strich (Linie), Stab (Staff, Rod, or Ell), and the Kette (Chain), in the old system were of different lengths in the several States of Germany, but in the Metric system their value is the same for all the States of the German Empire.

Names of States.	Meter or Stab=	German Fuss=	English value of the old German Fuss in different States.
	Fuss.	*Meter.*	*Inches.*
Baden - - -	3½	0·30000	11·81123
Bavaria - -	3·42631	0·29186	11·4907
Brunswick - -	3·50432	0·28536	11·325
Bremen - -	3·45602	0·28935	11·39196
Frankfort - -	3·51358	0·28461	11·20536
Hamburg - -	3·48953	0·28657	11·282
Hanover - -	3·42355	0·29209	11·5
Hesse, Ducal -	4·00000	0·25000	9·84984
Hesse, Electoral -	3·47585	0·28770	11·32692
Lubeck - -	3·47683	0·28760	11·32380
Mecklenburg -	3·43643	0·29100	
Nassau - -	3½	0·30000	11·81123
Oldenburg - -	0·37975	0·29588	11·649
Prussia - -	3·18620	0·31385	12·35664
Saxony - -	3·53120	0·28319	11·14944
Wurtemburg -	3·49052	0·28649	11·27

The old German Fuss was divided into 12 Zoll; each Zoll was equal to 1·029 English inch, and was divided into 12 linien.

METRIC MEASURES OF SURFACE.

The square meter, or stab, is the unit. The ar is 100, and the hectar 1,000 square meters. The square meter (or centiar) = 10·152 old Prussian square fuss, or 1·9603 English square yards; the ar = 7·0499 old Prussian square ruthen, or 119·603 English square yards; the hektar = 3·9166 old Prussian morgen, or 2·4711 English acres. The old Prussian square fuss and ruthe = respectively 9·8504 square decimeter and 14·1486 square meter, or 1·52467 English square foot and 16·96 English square yards; the morgen = 0·2553225 hecktar, or 2·52076 English roods. The hufe of 80 morgen = 765·96 hecktar, or 18·929 English acres.

METRIC MEASURES OF CAPACITY.

The cubic meter is the basis, and the liter, or kanne, is the unit = $\frac{1}{1000}$th part of a cubic meter. The schoppen, or half liter, the $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{1}{10}$ liter, the hectoliter or fuss (cask), and the scheffel or bushel of 50 liters.

I.—LIQUID MEASURES OF CAPACITY.

The liquid measures for public trading purposes have the capacity marked upon them; the unit, multiple, or part of the liter being followed by the word liter, or the letter L. The decimal parts of the liter are expressed by decimal fractions, and the binary parts by vulgar fractions. The liquid measures are as follows: 20, 10, 5, and 2 liter or kannen, 1 liter or kanne,* ½ or ·5 liter or kanne = 1 schoppen, ·2 liter or kanne, ¼ liter or kanne, ·1 liter or kanne, $\frac{1}{16}$ liter or kanne, ·05 liter or kanne, $\frac{1}{32}$ liter or kanne, ·02 liter or kanne. They are made of pewter or tin-plate, or else of brass or copper, well tinned inside with pure tin.

II.—DRY MEASURES OF CAPACITY.

The measures are 1 hectoliter, or 1 fass (cask), ½ hectoliter or ·5 hecteliter, or 1 scheffel (bushel), ¼ hectoliter or ½ scheffel, 20, 10, 5, 2, and 1 liter, ½ liter or ·5 liter, ¼ liter or ·2 liter, ¼ liter or ·1 liter, $\frac{1}{16}$ or ·05 liter. The name of the measure must be marked upon it: the three larger measures are marked respectively, 1 H, ½ H or ·5 H, and ¼ H; or, instead of the letter H, the full word hectoliter may be used, and the German name, 1 fass, 1 scheffel, ½ scheffel, added. The dry measures are made of iron plate, or copper plate, or wood.

METRIC WEIGHTS.

The kilogramm is the unit of weight; it is the weight of a liter of distilled water at 4 degrees of the Centigrade thermometer, or 89 degrees on Fahrenheit's thermometer. The kilogramm is divided into 1,000 gramms, with decimal subdivisions of the gramm.

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* The measures of capacity called Kanne, Schoppen, Scheffel, and Fass, under the old system, differed in quantity in the different German States; but, under the metric system, they indicate exactly the same quantity throughout the whole of the German Empire.

Subdivisions.	Systematic name	Old Prussian value.	English value.
$\frac{1}{1000}$ part of a gramm	= 1 Milligramm	= ·06 Kom =	·01543 Troy grs.
10 Milligrammen	= 1 Zentigramm	= 6 ,, =	15432 ,,
10 Zentigrammen	= 1 Dezigramm	= 6 ,, =	1·54323 ,,
10 Dezigrammen	= 1 Gramm	= 6 Cent =	15·4323 ,,
10 Grammen	= {1 Dekagramm or New Loth}	= ·6 Loth* =	154·32348 ,,
1000 ,,	= 1 Kilogramm =	{60 ,, or 2 Pfund†} =	2·20466 lbs. Av.
500 ,,	= 1 Pfund	=	= 1 1025 ,,
100 Pfund	= 1 Zentner	=	= 110·236 ,,
2000 ,,	= 1 Tonne	=	= 19·6844 cwt.

The Medicinal weights are the same as the smaller weights given above.

The weights used are 50 kilogrammen, 100 pfund or 1 zentner, 50 pfund or ½ zentner, 20, 10, 5, 2, and 1 kilogramm, 500, 100, 50, and 20 grammen, 10 grammen or 1 dekagramm, or 1 new loth, 5, 2, and 1 gramm, 5, 2, and 1 dezigramm, 5, 2, and 1 zentigramm, and 5, 2, and 1 milligramm.

Every legal weight has its denomination clearly marked upon it. The weights down to 50 grammen are usually made of cast iron; and the centigramm and milligramm weights are made of alluminium; but platinum, silver, brass, bronze, German silver, and metallic alloys, similar to those metals as regards hardness and liability to oxidation, may be used for weights of all sizes.

The following table shows the marks used for the several denominations of weights:—

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* The old German Loth was equal to about half an English ounce Avoirdupois.

† The old German Pfund varied in different localities; it was a little heavier than the English pound Avoirdupois; there was also an Apothecaries' Pfund. Previous to the establishment of the *Zoll Pfund* as a legal Commercial weight by the Law of the 17th May, 1856, the old legal Pfund was equal to 1·03118 lb. Avoirdupois; the present Metric Pfund is the same as the Zoll Pfund; that is, it is equal to 1·1025 lbs. Av. English.

TABLE OF DENOMINATIONS to be marked on WEIGHTS.

Weights.	Principal marks, of which *one* is in each case requisite and sufficient.			Supplementary marks which may also be used.
	K.	G.		
50 Kilogramm -	50	—	100 lb or Pf.	1 ctr. (cwt.)
50 pounds -	—	—	50 lb. ,,	0·5 ctr.
20 kilogramm -	20	—	40 lb. ,,	—
10 ,, -	10	—	20 lb. ,,	0·2 ctr.
5 ,, -	5	—	10 lb. ,,	0·1 ctr.
2 ,, -	2	—	4 lb. ,,	—
1 ,, -	1	—	2 lb. ,,	—
500 gramm -	0·5	500	1 lb. ,,	—
½ pfund -	—	—	—	—
200 gramm -	0·2	200	—	20 N. L.
100 ,, -	0·1	100	—	10 N. L.
50 ,, -	0·05	50	—	5 N. L.
20 ,, -	0·02	20	—	2 N. L.
10 ,, -	0·01	10	—	1 N. L.
5 ,, -	0·005	5	—	0·5 N. L.
2 ,, -	0·002	2	—	—
1 ,, -	0·001	1	—	—
5 decigramm -	—	0·5	5 D.	—
2 ,, -	—	0·2	2 D.	—
1 ,, -	—	0·1	1 D.	—
5 centigramm -	—	0·05	5 C.	—
2 ,, -	—	0·02	2 C.	—
1 ,, -	—	0·01	1 C.	—
5 milligramm -	—	—	5 M.	—
2 ,, -	—	—	2 M.	—
1 ,, -	—	—	1 M.	—

SPAIN.

The *Weights* and *Measures* are the Metro and Kilometro for length, the Litro for capacity, the Gramo for weight, and the area for surface and the hectarea for land the same as those of France.

OLD SPANISH WEIGHTS AND MEASURES.

Lengths.—Pies de Burgos of 12 Pulgadas, of 12 Lineas = 11·1816 English inches or ·27833 Metro; Vara is 3 Pies or ·91318 English yard or ·835 Metro; Estado is 2, the Estadal 4, and the Passo 5 Varas; the Vara is also divided into 4 Palmos, each of 12 Dedos or 9 Pulgadas; the Cuerda is 33 Palmos; the Codo is ⅔ of the Vara. The Castilian Legua is 5.000, and the Spanish Legua 8,000 Varas; the former = 2·634, and the latter 4·215 English miles, or 4175 and 6680 Metros respectively. The Geographical Legua = 7603·84 Varas, or 3·945 English miles, or 6943·6746 English yards, or 6·349206 Kilometros, and the Legua Maritima = 6653·36 Varas or 5·5555556 Kilometros, or 3·45 English miles, or 6075·7152 English yards. *Surface.*—The square Estadal of 16 square Varas or 144 square Pies = 13·7589 English square yards, or ·697225 square Metro; Fanega of 576 square Estadals = ·64256 Area or 1·58786 English acres; Yugada = 50 Fanegadas. *Capacity* (*a*) *dry goods.*—Cahiz of 12 Fanegas, of 12 Celemines (or Almuezas), or 48 Cuartillos = 2·32 British imperial quarters, or 665·88 litros. (*b*) *Liquids.*—The Cantara or Arrobamayor, for wine and brandy, of 8 Azumbres, or 32 Cuartillos = 3·54 British imperial gallons, or 16·13716 Litros; Moyo = 16 Cantara; the Arroba-menor (for oil) of 4 Cuartillos, each of 25 Panillos = 2·77 British imperial gallons, or 12·564 Litros. *Weights.*—Libra or 2 Castilian Marcos, 16 Onzen, 128 Ochavos or 256 Adarmes = 1·014422 lb. av. English or ·46014 Kilogrammes. Quintal = 100 Libras (4 Arrobas of 25 Libras).*

GIBRALTAR.

The Weights and Measures are chiefly those of Great Britain. The wine gallon is less than the British imperial gallon, and more than the old English wine gallon; it is ·9114 British imperial gallons, or 4·141 Litres.

The Fanega for dry measure = 72·675 Litres. The Quintal of 100 Libras = 101½ lbs. avoirdupois English.

PORTUGAL.

The Weights and Measures are those of the metric system (see France, p. 6).

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* Tonelada = 10 Quintals of 100 Kilogrammes each.

HOLLAND.

The metric system, having the old Dutch denominations applied to the new Measures and Weights, was introduced in Holland in 1821; the Metre was called *El;* the Decimetre, *Palm;* the Centimetre, *Duim;* the Millimetre, *Streep;* the Decametre, *Roede;* the Kilometre, *Mijl;* the Hectare, *Bunder;* the Litre, *Kan* and *Kop;* the Decilitre, *Maatje;* the Centilitre, *Vingerhoed;* the Dekalitre, *Schepel;* the Hectolitre, *Vat* or *Ton* and *Mudde* or *Zak;* the Kilogramme, *Pond;* the Hectogramme, *Ons;* the Decagramme, *Lood;* the Gramme, Wigtje, and the Decigramme, *Korrel;* but under the Act of 7th April, 1869, which came into operation on 1st July, 1870, the metric denominations are used as follows:—

MEASURES OF LENGTH.

		English value. Inches.
	1 Millimeter (or Streep)	= ·03937
10 Millimeters	= 1 Centimeter (or Duim)	= ·393707
10 Centimeters	= 1 Decimeter (or Palm)	= 3·937079
10 Decimeters	= 1 Meter (or El)	= 39·37079
		Yards.
10 Meters	= 1 Decameter (or Roede)	= 10·93627
100 Decameters	= 1 Kilometer (or Mijl)	= 1093·627

MEASURES OF SURFACE.

		English value. Sq. Yards.
	1 Centiare (or Vierkant-El)	= 1·1960
100 Centiares	= 1 Are (or Vierkant-Roede)	= 119·6033
		Acres.
100 Are	= 1 Hectare (or Bunder)	= 2·4711

CUBIC MEASURES.

		English value. Cubic Feet.
	1 Kubick-decimeter, or Kubick-palm	= 3·5316
10 Kubic-decimeters	= 1 Stere or Kubick-meter, or Wisse, or Kubick-El	35·3165

MEASURES OF CAPACITY.

			English value.
			Fluid Drachms.
10 Milliliters	=1 Centiliter (or Vingerhoed)	=	2·819
			Ounces.
10 Centiliters	=1 Deciliter (or Maatje)	=	3·5239 or ¾ of a gill
			Imperial Pint.
10 Deciliters	=1 Liter (or Kop or Kan)	=	1·7619
			Gallons.
10 Liters	=1 Dekaliter (or Schepel)	=	2·2024
10 Dekaliters	=1 Hektoliter (or Mudde or Vat)	=	22·0244

WEIGHTS.

			English value.
			Troy grains.
10 Centigrammes	=1 Decigramme (or Korrel)	=	1·54323
10 Decigrammes	=1 Gramme (or Wigtje)	=	15·43234
10 Grammes	=1 Dekagramme (or Lood)	=	154·32348
			Ounces.
10 Dekagrammes	=1 Hectogramme (or Ons)	=	3·52739
			lbs. Av.
10 Hectogrammes	=1 Kilogramme (or Pond)	=	2·2046

BELGIUM.

The weights and measures are the same as those of France (see p. 6).

DENMARK.

The metric system of weights and measures (see France) has been adopted by the Danish Parliament; the old system in use was as follows:—*Length.*—Fod of 12 Tommer of 12 Linier = 11·652 English inches, or ·3138535 metre; Alen = 2 Fod; Favn = 3 Alen; Rode = 2 Favn; Meile = 2000 Rode, or 24000 Fod or 7532·5 metres, or about 4·136 miles English. Surveyors use decimal divisions and multiples of the Fod. *Surface and solidity.*—The squares and cubes of the measures of length. The land Tönde is 1400 square Alen; 11 Tönder = about 15 English acres. A Favn of firewood is 6 × 6 × 2 Fod = 72 cubic Fod. *Capacity* (*a*) *dry goods.*—The Tönde of 8 Skepper is the chief corn measure; it is equal

to 139·121 Litres, or 3·826 British imperial bushels. The Skeppe of 4 Fjerdingkar is equal to 17·39 Litres, or 3·826 British imperial gallons. (*b.*) *Liquids.*—Pot of 4 Pægle = 1·8712 British imperial pints; Flask of 3 Pægle = 1·4034 British imperial pints. A Viertel is 8, and an Anker is 38 Potter. A Fad is 4 Oxehoveder, each of 6 Anker. *Weights.*—Pund of 100 Kvinten, each of 10 Ort = ½ Kilogramme = 1·1023 lb. Av. English; Centner = 100 Pund = 110·233 lbs. Av. English.

SWEDEN.

By an Act passed in 1875 the metric system of weights and measures (see France p. 6) was introduced in Sweden. The weights and measures in use up to that time were as follows:—*Length.*—Fot of 10 Tum, each of 10 Linier = 11·6893 English inches, or ·296901 metre; Stäng is 10 Fot; Ref is 10 Stänger or 100 Fot; Mil of 360 Ref or 36000 Fot = 6·64164 English miles, or 10·688436 Kilometres. *Surface and cubic measures* are the squares and cubes of the measures of length. *Capacity.*—Cubic Fot of 10 Kannor, each of 100 cubic Tum, each of 1000 cubic Linier; the Kannor is equal to 4·6083 British imperial pints. *Weights*—Skulpund 100 Ort, each of 100 Korn = ·937 lb. Av. English; a Centner = 100 Pund, 93·77289 lb. Av.; a Ny-last = 100 Centner = 83·723 cwt. English.

NORWAY.

By the law of 22nd May, 1875, the metric system of weights, as in France, was adopted for the whole Kingdom of Norway at the expiration of three years from the passing of the law. The old weights and measures of Norway were the following:—*Length.*—Fod of 12 Tommer of 12 Linier = 12·3563 English inches, or ·3137 metres; Alen of 2 Fod; Favn of 3 Alen; Mül of 600 Favn or 36000 Fod = 7·020624 English miles. *Weights.* The Skulpund = ·4981 Kilogramme; the Pot = ·9651 Litre, or 1·6991 British imperial pint; the Korntönde = 138·97 Litres, or 3·82307 British imperial bushels.

SWITZERLAND.

On the 1st January, 1873, the metric system of Weights and Measures (the same as in France) became the legal system in Switzerland.

MEASURES OF LENGTH.

COMPARISON OF METRIC AND OLD SWISS MEASURES OF LENGTH.

Sub-divisions.	*Systematic name.*	*Old Swiss value.*	*English value.*
			Inches.
10 Millimeters	= 1 Centimeter =	3⅛ Linien =	·3937
10 Centimeters	= 1 Decimeter =	3⅛ Zoll =	3·9370
10 Decimeters	= 1 Meter =	3⅛ Fuss =	39·37079
			Yards.
10 Meters	= 1 Dekameter =	33⅓ Fuss =	10·9363
10 Dekameters	= 1 Hektometer =	333⅓ ,, =	109·3633
10 Hektometers	= 1 Kilometer =	3333⅓ ,, =	1093·633

The old Swiss Fuss (or pied) was divided into 10 Zoll (or pouces) and was equal to 30 Centimeters or 11·811237 English inches; a Meter is equal to 3 Fuss 3 Zoll and 3⅛ Linie or 3⅛ Fuss as above given.

In the old system a Klafter was 6, and a Ruthe 10 Fuss; an Ell, also called Brache or ⅓ Staab, was 2 Fuss; a Staab was 4 Fuss, and was equal to 1·20 Meter; a Stunde was 1600 Ruthen or 16000 Fuss, and was equal to 4·8 Kilometers, or 5 Swiss Stunde were equal to 24 Kilometers.

MEASURES OF SURFACE.

COMPARISON OF METRIC & OLD SWISS MEASURES OF SURFACE, OR SQUARE MEASURES.

Sub-divisions.	*Systematic name.*	*Old Swiss value.*	*English value.*
		Square Fuss.	Sq. Yard.
100 Square Decimeters	= 1 Centiare or Square Meter	= 11·11 =	1·1960
100 Sqre. Meters	= 1 Ar	= 1111·11 =	119·6032
		Juchart.	Acres.
100 Ar	= 1 Hektar	= 2·777 =	2·4711

In the old system a square Klafter was 36 sq. Fuss and was equal to 3·8751 English square Yards, or 3·24 square Meters; a square Ruthe was 100 square Fuss, and was equal to 10·7642 English square Yards, or 9 square Meters; a Juchart was 400 square Ruthen, or 40,000 square Fuss, and was equal to 4305·71928 English square Yards or 36 Ar. 100 square Fuss = 9 square Meter; 1 Juchart = 36 Ar.

CUBIC MEASURES.

COMPARISON OF METRIC AND OLD SWISS CUBIC MEASURES.

Sub-divisions.	*Systematic name.*	*Old Swiss value.* Cubic Fuss.	*English value.* Cubic Feet.
10 Decisteres =	1 Stere or Cubic Meter	= 37·037	= 35·31658
0 Steres =	1 Dekastere	= 370 370	= 353·1658

In the old system the Cubic Klafter of 216 cubic Fuss was equal to 205·6662 English cubic feet, or 5·832 cubic Meters, but the firewood Klafter varied in the different cantons; in some it was 144, in others 126, and in others 108 Swiss cubic Fuss. The cubic Ruthe of 1000 cubic Fuss was equal to 953·5476 English cubic feet, or 27 Steres or cubic Meters. 1000 cubic Meters are equal to 37037 cubic Fuss.

MEASURES OF CAPACITY.

COMPARISON OF METRIC & OLD SWISS MEASURES OF CAPACITY FOR LIQUIDS AND DRY GOODS.

Sub-divisions.	*Systematic name.*	*Old Swiss value.* Schoppen.	*English value.* Imperial Pint.
10 Milliliters =	1 Centiliter	= ·0266	= ·01761
10 Centiliters =	1 Deciliter	= ·2666	= ·1761
10 Deciliters =	1 Liter	= 2·6666	= 1·7619
		Maass.	
10 Liters =	1 Dekaliter	= 6·6666	= 17·6195
		Malter.	Imperial Gallons.
10 Dekaliters =	1 Hektoliter	= ·6666	= 22·024

In the old system the Malter, the chief measure for grain and other dry goods, was divided into 10 Viertel and was equal to 4·1268 British Imperial Bushels or 150 Liters. The Viertel (which was divided into 10 Imi) was equal to 3·30144 British Imperial Gallons or 15 Liters. The Saum, the largest measure for liquids, was divided into 100 Maass and was equal to 33·0144 British Imperial Gallons or 150 Litres; the Saum was also divided into 4 parts, each of which was called an Eimer = 8·2546 British Imperial Gallons or 37·5 Litres; the Maass was divided into 4 Schoppen, and was equal to 2·6411 British Imperial Pints or 1½ Litres. The Schoppen was equal to ·6603 British Imperial Pint or ·375 Liter.

6 Hektoliters are equal to 4 Saum.

WEIGHTS.

COMPARISON OF METRIC AND OLD SWISS WEIGHTS.

Sub-divisions.		*Systematic name.*	*Old Swiss value.*	*English value.*
			Quint.	Grains Troy.
10 Milligramms	= 1	Centigramm	= ·0025	= ·1543
10 Centigramms	= 1	Decigramm	= ·025	= 1·543
10 Decigramms	= 1	Gramm	= ·256	= 15·4323
10 Gramms	= 1	Dekagramm	= 2·560	= 154·3234
			Loth.	Oz. Av.
10 Dekagramms	= 1	Hektogramm	= 6·40	= 3·5273
				Pounds.
10 Hektogramms	= 1	Kilogramm	= 64	= 2·2046
			Pfund.	
,, ,,	=	,,	= 2	= 2·2046
100 ,,	= 1	Quintal	= 200	= 220·46
10 Quintals	= 1	Ton	= 2000	= 2204·6
				Cwt.
,, ,,	=	,,	= ,,	= 19·6841

In the old system the Pfund, which was equal to 500 Gramms or 1·1023 Pound Avoirdupois English, was divided into 16 Unzen; the Unze was equal to ·06895 lb. Av. English or 31·25 Gramms; the Unze was divided into 2 Loth, and each Loth into 4 Quint. The Pfund was also divided into *halves*, *quarters*, and *eighths*. The Centner of 100 Pfund was equal to 110·233 lbs. Avoirdupois English or 50 Kilogramms.

ITALY.

The Weights and Measures are those of the Metric System, as in France, Belgium, and Switzerland.

MALTA.

MEASURES OF LENGTH.—Piede = 11$\frac{1}{6}$ inches; Oncia = ·856 inch: Palmo of 12 Oncia = 10·2757 inches; Misura of 4 Palmi = 41·1031 inches.

MEASURES OF CAPACITY.—The old British pint, quart, and gallon = respectively ·833 pint, ·208 gallon, ·833 gallon imperial; and the Salma of 6 Tummoli = 7·937 imperial bushels.

WEIGHTS.—Rotolo = 1·745 lbs. Av.; Cantaro of 100 Rotoli = 174$\frac{1}{2}$ lbs. Av.; Quintal of 114 Rotoli = 199 lbs. av.; Litra of 12 Oncie = 4886 Troy Grains.

TURKEY.

Length.—Pike or Drâ of 24 Kerats, in commerce reckoned as 27 English inches or ·6857876 metre. There are three kinds of Pike, viz , Drâ (for silks and drapery) = 27, Halebi or Archin (used in surveying(= 27·9 and Endassé (used for all other manufactured goods except silk and drapery) = 25·68816 English inches. The Halebi = ·708647 metre, and the Endassé = ·65247 metre. Berri = 1·0377086 English mile, or 1670 metres, or 1826·36719 English yards. Agatsch or Farsang of 3 Berris. *Surface.*—Square Kerat and Pike; Cane or Reed of 5½ Pikes; Feddan = as much as a yoke of oxen can plough in one day, or about 1 acre English. *Capacity* (*a*) *dry goods.*—Killow of 2 Jubbehs, of 2 Sa, of 5½ Rottols, of 12 Okiejehs or 900 Dirhems = 35·27 Litres, or 3·88096 British imperial pecks, or 6·76192 British imperial gallons; Fortin = 3 Killows. (*b*) *Liquids.*—Almud of 8 Oke, of 5½ Okiejehs = 1·152 British imperial gallons. The Rottol of 12 Okiejehs = 2·5134 British imperial pints, and the Cantar = 100 Rottols. *Weights.*—Oke of 4 Okiejehs = 400 Dirhems = 2·83418 lbs. av. English, or 1·28554 Kilogramme; Cantar of 44 Okes, or 100 Rottolos = 124·70392 lbs. av. English, or 56·56378 Kilogrammes; Rottolo = 1·2470392 lbs. av. English, or ·5656378 Kilogramme.

In accordance with a decree published in December, 1872, the metric weights and measures (see France) have been in use for pharmacy in Turkey since 1st January, 1873.

GREECE.

Weights and Measures are the same as those of France. *Length.*—Pecheus is Métre = 39·37079 English inches, Palamé is Décimetre = 3·93707 English inches, Daktylus is Centimetre, Gramme is Millimetre, Stadion is Kilometre = 1093·633 English yards, and Skoinis is Myriametre = 6·2138 English miles. *Surface* —Stremma is Are. *Capacity for dry goods and Liquids.*—Koilon is Hectolitre, Litre is Litra, Kotylé is Decilitre, Mystron is Centilitre, and Kybos is Millilitre. *Weights.*—Mnâ is Kilogramme, Drachmé is Gramme, Obolos is Decigramme, and Kokkos is Centigramme. Talanton = 1¼ Quintal, or 330·699 lbs. av., and the Tonos of 10 Talanta = 1¼ *Tonneaux*, or 3306·9 lbs. av. English, or 29·52669 cwt.

CHINA.

Length.—Chih of 10 Tsun, each of 10 Fun = $14\frac{1}{10}$th English inches; Chang of 10 Chih = 11·75 feet English, and the Yin of 10 Chang. The Chih above given is the Canton customs' Chih—the standard adopted in the tariff settled between Great Britain and China. It is the legal measure at all the ports of trade; its use is becoming more general, and it may be ultimately adopted as the universal standard of length. The itinerary measure is the Lí of 360 Pu each, of 5 Chih, each of 20 Lí (or 5 Tsun), each of 5 Fun. The Lí = about 486·176 English yards. The length of the Lí has varied at different periods from 386 to about 631½ English yards; its average length may be taken as a little less than ⅓rd of an English mile. *Surface.*—The principal land measure is the Mau; it varies in different places as from 4·766 Maus to 7·205 Maus to the British statute acre. *Capacity* (*a*) *dry goods.*—Tau of 10 Shing, each of 10 Koh = 1·13 British imperial gallons. The size of the Tau differs considerably in different places, thus there is the Granary Tau (Ssang Tau) just given, the Market Tau (Shi Tau or Shi Kin Tau) = about 1·63 British imperial gallons, and the Swang Tau = about 2·26 British imperial gallons. At Macas the Shing is a little less than 1 British imperial pint. At Canton, in 1840, of 2 Shings were examined 1 contained 1·72, and the other ·919 of a British imperial pint. At Shanghai three specimens of the Shing were found to contain respectively 1·85, 1·87, and 1·33 British imperial pints. (*b*) *Liquids.*—Measures containing definite weights are used for spirits and oil; the most usual sizes contain 1, 2, 4, and 8 Taels' weight. There are also large earthenware measures containing 60, 30, and 15 Catties, these are always of the same size and contain the same weight of liquids of the same specific gravity. *Weights.*—Tan or Pecul of 100 Kin or Catties, each of 16 Leang or Tael = 133⅓ lbs. av. of English. The Tael is nominally divided into 10 Liu of 10 Shu, the Shu being the weight of a shelled millet seed. There are also some nominal multiples of the Kin, viz., the Yin of 2 Kin, the Kiun of 30 Kin, the Shi of 120 Kin. The Shi is often used to denote the same weight as the Tan or Pecul, viz., 100 Kin. For weighing gold, silver, and medicines, the following subdivisions of the Tael or used:—Tael of 10 Tsien, each of 10 Fon or Candareen, each of 10 Le or Cash.

English Avoirdupois Weights expressed in Chinese Commercial Weights.

English.		*Chinese.*	*English.*		*Chinese.*
1 Oz.	=	¾ of a Tael or 7½ Mace	1 Quarter	=	21 Catties
4 ,,	=	3 Taels	1 Cwt.	=	84 ,,
1 lb.	=	12 Taels or ⅓ of a Catty.	1 Ton	=	16 Peculs. or 80 Catties

INDIA.

(1 BENGAL—2 MADRAS—3 BOMBAY).

(1) BENGAL.

Length.—Guz of 2 Hât'hs, of 2 big Hât'hs, of 12 Ungulees, of 3 Jow or Jaub = 36 English inches. Danda or fathom of 2 Guz = 2 yards English; Coss of 2,000 Dandas = $2\frac{1}{11}$ English miles. The Yojan or Jojun of 4 Coss = $9\frac{1}{11}$ English miles. For cloth measure the Guz (= 36 English inches) is divided into 2 Hâth's, each of 8 Gerah, each of 3 Ungulee, each of 3 Jow or Jaub. The native linear measures have no uniform standard. The Hât'h, generally translated cubit, has an average length of 19½ inches, but in some places it is 18, and in others 20 inches; the Guz differs very much in different provinces, varying from 32 to 39½ inches; but now that the English measures have become more known the Hât'h and Guz are generally synonymous with the English cubit (18 inches) and yard (36 inches). In the North-West Provinces the "Illahi Guz," used in the Government surveys, is 33 English inches, and 3 Guz make 1 Bans or Ganteh, 20 Ganteh make 1 Jarib. *Surface.*—Beegah of 29 Cottahs, each of 20 Gundas, each of 4 Cowries, each of 4 square Hât'hs = 1·600 square yards, or ·33057 acre English. The Cottah is also divided into 16 Chittaks, each of 20 Gandeh. In the North-West Provinces the Beejah is divided into 400 square rods, each equal to $68\frac{1}{11}$ square feet English. *Weights and measures of capacity.*—The East India Weights and Measures Act, 1871, extends to the whole of British India: its provisions are limited to weights and measures of capacity, and their use is limited to Government offices, Municipal bodies, or Railway companies; the *Ser*, equal to a Kilogramme, or 2·20462 pounds Avoirdupois English, is the unit of weight; and a measure containing one

such *Ser* of water, that is of the same capacity as the Litre, or ·22018 of a British imperial gallon, or 1·76144 imperial pint, is the standard unit of measures of capacity.

The old weights and measures of capacity are as follows:— *Old Weights.*— Tola = 180 grains Troy; 5 Tolas = 1 Chittâk; 16 Chittâks = 1 Seer = $2\frac{2}{3}\frac{5}{5}$lbs. av.; 5 Seers = 1 Passeeree or Punsarie = 10$\frac{2}{3}$lbs. av.; 8 Passeerees or 40 Seers = 1 imperial or Indian Maund = 82$\frac{2}{7}$lbs. av. English. Hence 350 Tolas = 9lbs. av.; 35 Seers = 72lbs. av.; 7 Maunds = 576lbs. av., and 49 Maunds = 36 cwt. or 1·8 ton. 1 cwt. English = 54$\frac{4}{5}$ Seers. The old factory Maund, adopted by the Government in 1787, was exactly $\frac{2}{3}$cwt. or 74$\frac{8}{9}$lbs. av. The old Bazaar Maund, subdivided into 40 Seers, was 72$\frac{1}{2}$lbs. av. English. In the interior the Seer varies very considerably, thus at Allahabad and Lucknow it is 96 Tolas, at Mirzapore and Benares it is 84 Tolas, and at Hooghly it is 82 Seers. In the Calcutta market there are 2 Maunds in use, namely, the "Imperial" or "Indian" Maund = 82$\frac{2}{7}$lbs. av., and the factory Maund = 74$\frac{8}{9}$lbs. av. For weighing gold and silver the Tola is divided in 12 Mashas, each of 8 Ruttee, each of 4 Dhân, each of 4 Punks. The subdivisions of the Masha are used in stating the fineness as well as the weight of gold and silver. Pure gold or silver is said to be 12 Mashas fine. *Old Measures of Capacity* (*a*) *dry goods.*—Khahoon of 16 Soolis, each of 20 Pallis, each of 4 Raiks, each of 4 Koonkis, each of 5 Chittâks = about 41·1428 British imperial bushels. (*b*) *Liquids.*—Maund of 40 Seers, each of 16 Chittâks = $8\frac{8}{3}\frac{8}{5}$ British imperial gallons. The Chittâk (supposed to contain about 5 Rupees weight of oil) = about $2\frac{1}{3}\frac{1}{5}$ fluid ounces English.

(2) MADRAS.

Length.—The English foot and yard are now used by almost all native workmen. The native Kole or Artificers' rod, and also the Guz, is about 23 English inches. The Moolum (translated Covid or Cubit) of 24 Ungulums varies from 18 to 21 inches, its average length is 19$\frac{1}{2}$ to 19$\frac{3}{4}$ inches English. The Baum (translated fathom) is about 6$\frac{1}{2}$ feet English. *Nâlli Valli* signifies the distance walked in 24 minutes; it is equal to about 1$\frac{1}{4}$ English miles. A Kâdam of 7 Nâlli Valli = about 10 English miles. For new measures of capacity and weight, see Bengal; the old weights and measures of capacity are as

follows:—*Old Measures of Capacity.*—Garce of 80 Paras, each of 5 Mercals, each of 8 Puddees, each of 8 Ollucks = 18·03 British imperial quarters; the Puddee = 1·4424 British imperial quart. *Old Weights.*—Candy of 20 Maunds, each of 8 Viss, each of 5 Cutcha Seers, each of 8 Pollums, each of 3 Tolas = 493·7142 lbs. av. English. Tola = 180 Troy grains, and the Pollum = 540 Troy grains, or 1·2342 oz. av. By commercial usage, the Viss is always considered 3¼lbs., the Maund 25 lbs., and the Candy 500 lbs., English av. The weights used by the jewellers are the Munjadi (= 5 Troy grains), and the Pagoda (= 54 Troy grains) or $\frac{1}{10}$th of a Pollum.

(3) BOMBAY.

Length.—Guz of 24 Tussoos = 27 inches English; Hât'h of 16 Tussoos = 18 inches English. Vent'h of 8 Tussoos = 9 inches English, and the Ungulee (2 Ungulees make 1 Tussoo) = 1¼ inches English. *Surface.*—Beegah, each of 20 Pund, each of 20 Kutties = ·81136 English acre, 120 Beegah make 1 Çhahur. In the Revenue field survey, the English acre is used, subdivided into 40 Goontahs each, and 16 Annas. In the North West provinces, the Beegah = 3025 square yards, or ·6250 acre English. It is divided into 20 Biswa, of 20 Biswansi, of 20 Kachwansi, of 20 Sanswansi, of 20 Nanwansi. In Gugerat also, the Beegah = ·6250 acre English, and is divided into 20 Vaso, of 20 Vishwasi, of 20 Padat, of 20 Padtal of 20 Khund. For the new measures of capacity and weights introduced by the Act of 1871, see Bengal; the old weights and measures of capacity are as follows:—*Weights.*—The weights given under the head of Bengal are being introduced, but there are still the following in common use:—Candy of 20 Maunds = 560 lbs. av.; Maund of 40 Seers = 28 lbs.; Seer of 72 Tanks or 80 Pice = 11⅛ oz. av.; Tank of 4 Mashas = 2$\frac{3}{16}$ drs. av., and the Masha of 8 Ruktica, each of 4 Dhan or Yar. The Candy varies in different districts from 560 to 3055 lbs. av. The Sattara Candy is 3055 lbs. av, The Candy for Cotton is 28 Maunds or 7 cwt. English. *Old Measures of Capacity* (*a*) *Grain.*—Munda of 25 Parahs = 14·001 British imperial quarters; the Candy of 8 Parahs, each of 16 Pylees, each of 4 Seers, each of 2 Tipprees = 4·48004 British imperial bushels, or about 20¾ cwt. of rice. (*b*) *Liquids.*—Maund of 50 Seers, each of 60 Tolas = 7·7125 British imperial gallons.

JAPAN.

Length.—The Shaku of 10 Sung, each of 10 Bu, each of 10 Ring = 11·954 English inches. The Keng of 6 Shaku = 5·9772 English feet, the Choö of 60 Keng = 358·636 English feet, and the Ri of 36 Choö = 2·445 English miles. An English inch = ·083654, a foot = 1·003848, and a yard = 3·011544 Japanese Shakus. *Surface.*—The Square Shaku = ·992347 English square feet, the Tsubo of 36 Shaku = 35·724524 English square feet, the Choö of 10 Tang or 100 Se or 3000 Tsubo = 11908·17472 square yards, or nearly ¼ acre English. *Capacity* (*a*).—The Koku of 10 To = 4·992252514 English bushels; the To of 10 Shoö = 1107·5 English cubic feet, or 3·99380200837 British imperial gallons. The Shoö of 10 Ngöo = 110·75 English cubic inches, or 3·195 British imperial pints; the Ngöo of 10 Shiyaku = 11·075 cubic inches or ·3195 British imperial pint, and the Shiyaku of 10 Sai. The standard unit of Japanese measures of capacity is the Shoo, it is a rectangular vessel with a square base; its dimensions are 4·9 × 4·9 × 2·7 Sung. *Weights.*—The Keng of 160 Nomme = 1½ lb. av; the Riome of 4 Nomme = 232·96 Troy grains; the Nomme of 10 Fung = 58·24 Troy grains; the Fung of 10 Ring = 5·824 Troy grains; and the Ring of 10 Mo = ·5824 Troy grains.

STRAITS SETTLEMENTS.

MEASURES OF LENGTH.—Hasta or Covid = 18 inches English.

MEASURES OF SURFACE.—Orlong = 1·322 acre English.

MEASURES OF CAPACITY.—Gantang varies in size. At Singapore it is equal to 1·¼ British imperial gallon., but at Penang it is ·9796 imperial gallon.

WEIGHTS.—Catty = 1⅓lb. Avoirdupois. A gold Catty is 1⅓⅓ of the common Catty.

EGYPT.

Length.—Pike Draâ or Diraâ of 4 Rubs each of 6 Kirats = 27 English inches; the Gasab of 7 Diraâs = 3 English yards. The Diraâs differ in length. The Draâ Islambulhi or that used for measuring cloth and European Silk is 27 or more exactly 26·65404 English inches or ·6775 Metre;

the Belendi *draâ* for Syrian silks and native fabrics is 22·7369 English inches or ·5775 Metre; the Endaseh Draâ for cotton and linen goods = 25·13425 English inches or ·6384 metre; the Nile measure or Mekias draâ = 21·28773 English inches or ·5407 metre; the Nubian draâ = 26·65404 English inches or ·6775 metre. *Surface.*—Feddan = 400 Gasab = 1·1019 acre English. *Capacity.*—Daribba of 2 Ardeb, each of 6 Wehbib, each of 2 Queleh. In Alexandria the Ardeb = 7·4557 British imperial bushels, or 271 Litres. In Cairo the Ardeb = 4·924619 British imperial bushels; but its value is usually taken in round numbers, as 5 British imperial bushels, or about 182 Litres. The Nubian Ardeb is about the same value as that of Cairo. *Weight.*—Cantar of 100 Rottolos = 98·046 lbs. av. English. The Rottolo is divided into 12 Uckieh, or 96 Meticals, or 144 Dirhems.

CAPE OF GOOD HOPE.

Length.—The measures of length are partly those of Great Britain and partly the old Dutch measures, viz., Rheinland Fuss = 1·030, and Elle = 2·2556 English feet; 4 Elles are reckoned equal to 3 English yards. A Ruthe is 13, and a Fathom 6 feet. *Surface.*—The acre and the Morgen are each reckoned equal to 2 English acres. *Capacity.*—The imperial measures of Great Britain are used, but the old Winchester bushel and quarter, the old English wine gallon, and some Dutch measures, are those in most general use. Approximately 33 Winchester bushels are equal to 32 imperial bushels, and 6 old English wine gallons are equal to 5 imperial gallons. The Dutch dry measures in use are the Last of 10 Mudden, of 4 Amsterdam Schepel = 3·9261 British imperial quarters, and the Zak (3 Schepel = 1 Zak) = 18·3648 British imperial gallons, or 2·2956 British imperial bushels. The Schepel = 6·1216 British imperial gallons. The Dutch liquid measures are the Aam of 2 Anker, of 2 Steeknen, of 8 Stoopen, of 2 Mengeln, of 2 Pintjes, of 4 Maatjes = 34·164 British imperial gallons. *Weights.*—The weights in use are the Avoirdupois and Troy weights of Great Britain; the old Amsterdam Pfund of 32 Loth or 128 Drachmen = 1·32376 Troy lbs. or 1·0893 lbs. av. English. 92 old Amsterdam Pfund are reckoned equal to 100 lbs. av. English. There is also the old Dutch Troy Pfund of 2 Morken, or 8 Unzen, or 320 Engelsen = 1·08606 lbs. av. English.

MAURITIUS.

(Including Seychelles, Archipelago and all the other dependencies of the Mauritius.)

Since 1876 the metric system of Weights and Measures (see France) has been in operation.

The unit of weight is the Gramme, that of capacity is the Litre; but dues on duties (under Ordinance of 1869) are still levied for ton register, and druggists' and jewellers' weights are still the same as those of Great Britain.

Equivalents of Metric System in Mauritius Avoirdupois and Troy Weights.

COLONIAL WEIGHTS.

Grain	=	0·0531 Gramme.
Gros	=	3·824 ,,
Once	=	30·594 ,,
Livre	=	0·4895 Kilogramme.

AVOIRDUPOIS.

Dram	=	1·772 Grammes.
Ounce	=	28·349 ,,
Pound	=	0·453558 Kilogramme.
Stone	=	6·349 ,,
Quarter	=	12·698 ,,
Hundredweight	=	50·80 ,,
Ton	=	1016·10 ,,

TROY.

*Scruple	=	1·2959 Grammes.
*Dram	=	3·8879 ,,
Grain	=	0·06479 ,,
Pennyweight	=	1·5516 ,,
Ounce	=	31·091 ,,
Pound	=	0·373238 Kilogramme

* Apothecaries' Weights.

Equivalents of Measures of Capacity.

Mauritius Velte	=	7·4505 Litres.
,, Pinte	=	0·9313 ,,
Imperial Gallon	=	4·543438 ,,
,, Pint	=	0·5679 ,,
Reputed Quart Bottle	=	0·7572 ,,
,, Pint	=	0·3786 ,,
Barrel of Beer	=	1·635645 Hectolitres.
Hogshead of Beer	=	2·453467 ,,
,, Bordeaux Wine	=	2·2715 ,,

DOMINION OF CANADA.

Under the "Weights and Measures Act," 1873, of Canada, the following is the system of weights and measures :—

MEASURES OF LENGTH.

The "Imperial Yard" (see Great Britain) is the standard measure of length, and its divisions and multiples are as follows :—

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Inch	= 25·39229 Millimetres	= 1 Inch.
12 Inches	= 1 Foot	= 30·471 Centimetres	= 1 Foot.
3 Feet	= 1 Yard	= 91·412 ,,	= 1 Yard.
5½ Yards	= 1 Pole or Perch	= 5·02767 Metres	= 1 Pole or Perch.
22 ,,	= 1 Chain	= 20·11069 ,,	= 1 Chain.
220 ,,	= 1 Furlong	= 201·10695 ,,	= 1 Furlong
1760 ,,	= 1 Mile	= 1·6088 Kilometre	= 1 Mile

The Chain of 22 yards is divided into 100 links, and each link is equal to 7·92 inches or ·201106 metre.

In the Province of Quebec the measures of length are the foot, "French measure or Paris foot," equal to 12·79 inches standard measure, the perch equal to 18 French feet, and the "Arpent" of 180 French feet. Those measures are used only in territorial measurement; the French measures "Toise" and "Ell" (Aune) are discontinued, and the yard and foot are used instead of them.

SURFACE OR SQUARE MEASURES.

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Sq. Inch	= 6·4476 Sq. Centimetres	= 1 Sq. Inch.
144 Sq. Inches	= 1 „ Foot	= 9·28467 „ Decimetres	= 1 „ Foot
9 „ Feet	= 1 „ Yard	= ·83562 „ Metre	= 1 „ Yard
30¼ „ Yards	= 1 Rod or Perch	= 25·2775 „ „	= 1 Rod or Perch
40 Perches or	= 1 Rood	= 10·11100 Ares	= 1 Rood
1210 Sq. Yards	= 1 Rood	= „ „	= 1 Rood
4 Roods or 4840 Yards or 100,000 Sq. Links	= 1 Acre	= ·40444 Hectare	= 1 Acre.

In the Province of Quebec the measures of surface for lands originally granted under the Seignorial tenure are the perch of 324 square French feet and the "Arpent" of 32400 square French feet.

CUBIC MEASURES.

Sub-divisions.	*Systematic name.*	*Metric value*	*English value.*
	1 Cub. Inch	= 16·37215 Cub. Centimetres	= 1 Cub. Inch
1728 Cubic Inches	= 1 „ Foot	= ·28291 „ Metres	= 1 „ Foot
9 „ Feet	= 1 „ Yard	= ·76386 „ „	= 1 „ Yard

WEIGHTS.

The Imperial pound Avoirdupois is the standard measure of weight, from which all other weights and measures having reference to weight are derived, computed, and ascertained; all weights are parts, multiples, or proportions of it, as follows:—

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
7000 Grains	= 1 Pound Avoirdupois	= ·45359 Kilogram.	= 1 Pound
16 Drams	= 1 Ounce „	= 28·34954 Grammes	= 1 Ounce
16 Ounces	= 1 Pound „	= 453·59 Grammes	= 1 Pound
100 Pounds	= 1 Hundredweight or 1 Cental	= 45·359 Kilogram.	= 100 Pounds
2000 Pounds	= 1 Ton	= 907·18 „	= 2000 „

The Troy ounce contains 490 Avoirdupois grains, and is the standard measure of weight for gold, silver, platina and precious stones; and all measures of Troy weight are taken in parts, multiples, and certain proportions of the Troy ounce, and decimal parts and multiples of the Troy ounce for gold, silver, platina and precious stones are legal weights.

MEASURES OF CAPACITY FOR LIQUIDS.

The "Imperial gallon," containing ten pounds weight of distilled water, weighed in air at a temperature of 62 degrees Fahrenheit, and the barometer standing at thirty inches, is the standard measure of capacity for liquids; all other measures of capacity for liquids are derived, computed and ascertained from the Imperial gallon, and are parts, or multiples or proportions of it, as follows:—

Sub-divisions.	*Systematic name.*	*Metric value.*	*English value.*
	1 Pint =	·56771 Litre =	1 Imperial Pint
2 Pints =	1 Quart =	1·13543 ,, =	1 ,, Quart
4 Quarts =	1 Gallon =	4·54174 ,, =	1 ,, Gallon

The old wine gallon of 231 cubic inches was allowed to be used by consent of parties during seven years from the passing of the Act, and the ratio or proportion was fixed at 12 wine gallons for 10 Imperial or standard gallons: the imperial or standard gallon contains 277·27384 cubic inches.

MEASURES OF CAPACITY FOR DRY GOODS.

The "Imperial bushel," containing 8 Imperial or standard gallons, is the standard measure of capacity for commodities sold by dry measure; all other measures of capacity for dry goods are derived, computed, and ascertained from the Imperial bushel, and are parts, multiples, or certain proportions of it.

METRIC SYSTEM.

The same Act provides that no contract or dealing shall be deemed invalid or open to objection, on the ground that the weights or measures expressed or referred to in such contract or dealing are weights or measures of the metric system, or on the ground that decimal sub-divisions of legal weights and measures, whether metric or otherwise, are used in such contract or dealing; and the following table may be lawfully used for computing, determining, and expressing in weights and measures of Canada, weights and measures of the metric system:—

TABLE OF METRIC WEIGHTS AND MEASURES, SHOWING THEIR LEGAL EQUIVALENTS IN TERMS OF THE STANDARD WEIGHTS AND MEASURES OF CANADA.

MEASURES OF LENGTH.

Metric Denomination and Value.			*Equivalent in terms of the standards of Canada.*		
			Yards.	Feet.	Links.
Miriameter of	10000	Meters =	10939·444444 =	32818·333333 =	49724·74747
Kilometer ,,	1000	,, =	1093·944444 =	3281·833333 =	4972·47474
Hectometer,,	100	,, =	109·394444 =	328·183333 =	497·24747
Decameter ,,	10	,, =	10·939444 =	32·818333 =	49·724747
Meter ,,	1	,, =	1·093944 =	3·281833 =	4·972474
Decimetre ,,	$\frac{1}{10}$	,, =	·109394 =	·328183 =	·497247
Centimetre ,,	$\frac{1}{100}$	,, =	·010939 =	·032818 =	·049724
Millimetre ,,	$\frac{1}{1000}$	,, =	·001093 =	·003281 =	·004972

MEASURES OF SURFACE.

Metric Denomination and Value.			*Equivalents in terms of the Standards of Canada.*		
			Sq. Metres.	Sq. Yards.	Sq. Links.
Hectare of	100	Ares =	10000 =	11967·1444 =	247255·0511
Decare ,,	10	,, =	1000 =	1196·7144 =	24725·5051
Are ,,	1	,, =	100 =	119·6714 =	2472·5505
Centiare,,	$\frac{1}{100}$	,, =	1 =	1·1967 =	24·7255

WEIGHTS.

Metric Denomination and Value.		*Equivalents in terms of the Standards of Canada.*		
	Grams.	Pounds Avoirdupois.		Grains Troy
Millies =	1000000 =	2204·62125 =		
Quintal =	100000 =	220·46212 =		
Myriagram =	10000 =	22·046212 =		
Kilogram =	1000 =	2·204621 =		
Hectogram =	100 =	·220462 =		
Decagram =	10 =	·022046 =		
Gram =	1 =	·002204 =		15·4323487
Decigram =	$\frac{1}{10}$ =	·000220 =		1·5432348
Centigram =	$\frac{1}{100}$ =	·0000220 =		·1543234
Milligram =	$\frac{1}{1000}$ =	·0000022 =		·0154323

MEASURES OF CAPACITY.

Metric Denomination and Value.	Cubic Metres.	Litres.	*Equivalent in terms of the Standards of Canada.* Imperial gallons.
Kilolitre	= 1	= 1000	= 220·2443
Hectolitre	= $\frac{1}{10}$	= 100	= 22·0244
Decalitre	= $\frac{1}{100}$	= 10	= 2·2024
Litre	= $\frac{1}{1000}$	= 1	= ·2202
Decelitre	= $\frac{1}{10000}$	= $\frac{1}{10}$	= ·0220
Centilitre	= $\frac{1}{100000}$	= $\frac{1}{100}$	= ·0022

UNITED STATES OF NORTH AMERICA.

There are two systems of weights and measures in use in the United States of America, namely, the metric system authorised as permissive by the Act passed on the 28th July, 1866, and the old customary system, or system that was the only one in use prior to 28th July, 1866.

METRIC SYSTEM.

The metric system is the same in all respects as that of France (see p. 55).

The following tables may be lawfully used for computing, determining, and expressing in the customary weights and measures of the United States the weights and measures of the metric system.

COMPARISON OF METRIC AND CUSTOMARY WEIGHTS AND MEASURES OF THE UNITED STATES.

MEASURES OF LENGTH.

Metric Denominations and Values.	*Equivalents in Denominations that were solely in use prior to 28th July, 1866.*
Myriameter = 10,000 Meters	= 6·2137 miles.
Kilometer = 1,000 ,,	= 0·62137 mile, or 3·280 feet and 10 inches.
Hectometer = 100 ,,	= 328 feet and 1 inch.
Dekameter = 10 ,,	= 393·7 inches.
Meter = 1 ,,	= 39·37 inches.
Decimeter = $\frac{1}{10}$ of a Meter	= 3·937 inches.
Centimeter = $\frac{1}{100}$,,	= 0·3937 inch.
Millimeter = $\frac{1}{1000}$,,	= 0·0394 inch.

MEASURES OF SURFACE.

Metric Denominations and Values.			*Equivalents in Denominations that were solely in use prior to July 1866.*
Hectare	=	10,000 Square meters	= 2,471 Acres.
Are	=	100 „	= 119·6 Square Yards.
Centare	=	1 „	= 1,550 „ Inches.

MEASURES OF CAPACITY.

Metric Denomination and Value.			*Equivalents in Denominations that were solely in use prior to 28th July, 1866.*	
			Dry Measure.	Liquid or Wine Measure. Gallons.
Kilolitre or stere	=	1000 Litres	= 1 Cub. metre = 1·308 Cub. yards	= 264·17
Hectolitre	=	100 „	= $\frac{1}{10}$ „ „ = 2 Bushels 3·35 Pecks	= 26·417
Dekaliter	=	10 „	= 10 „ decimeters = 9·08 Quarts	= 2·6417 Quart.
Liter	=	1 „	= 1 „ „ = ·908 „	= 1·0567 Gill.
Deciliter	=	$\frac{1}{10}$ „	= $\frac{1}{10}$ „ „ = 6·1022 Cubic inches	= 0·845 Fluid Ounce.
Centiliter	=	$\frac{1}{100}$ „	= 10 „ centimeters = ·6102 „ „	= 0·338 Fluid Drachm.
Milliter	=	$\frac{1}{1000}$ „	= 1 „ „ = ·061 „ „	= 0·27

WEIGHTS.

Metric Denominations and Value.		Grams.	*Equivalents in Denominations that were solely in use prior to 28th July, 1866.* Weight of what quantity of water at minimum density.	Pounds Avoirdupois.
Millier or Tonneau	=	1,000,000	= 1 Cubic meter	= 2204·6
Quintal	=	100,000	= 1 Hectoliter	= 220·46
Myriagram	=	10,000	= 10 Liters	= 22·046
Kilogram or kilo	=	1,000	= 1 Liter	= 2·2046 Ounces Avoirdupois.
Hectogram	=	100	= 1 Deciliter	= 3·5274
Dekagram	=	10	= 10 Cubic Centimeter	= 0·3527 Grains Avoirdupois.
Gram	=	1	= 1 „ „	= 15·432
Decigram	=	$\frac{1}{10}$	= $\frac{1}{10}$ of a Cubic centimeter	= 1·5434
Centigram	=	$\frac{1}{100}$	= 10 Cubic Millimeters	= 0 1542
Milligram	=	$\frac{1}{1000}$	= 1 „ „	= 0 0153

OLD OR CUSTOMARY SYSTEM.

MEASURES OF LENGTH, SURFACE, AND SOLIDITY.

Before the passing of the Act of 28th July, 1866, the measures of length, distance, surface and solidity, the same as the imperial measures of Great Britain and Ireland, were the sole legal standards in use (see p. 49).

MEASURES OF CAPACITY FOR DRY GOODS.

The dry measures of capacity are the same as those that were in use in Great Britain and Ireland prior to the 1st January, 1826, namely, the *Gallon*, divided into 4 quarts or 8 pints, and equal to ·969447 British imperial gallons or 4·40462 liters; the *Winchester Bushel* of 8 gallons, equal to ·969447 British imperial bushels or 35·237 liters; the *Coomb* of 4 bushels, equal to 3·8777 British imperial bushels or 1·40948 hectolitres; the *Quarter* of 2 coombs, equal to ·969447 British imperial quarters or 2·81896 hectolitres; the *Wey* or *Load* of 5 quarters, equal to 4·8472 British imperial quarters or 14·0948 hectoliters; and the *Last* of 2 weys or 80 bushels, equal to 9·6944 British imperial quarters or 28·1896 hectolitres.

MEASURES OF CAPACITY FOR LIQUIDS.

(1.) WINE AND SPIRIT MEASURES.

Sub-divisions.		*Systematic name.*	*English value.*	*Metric value.*
			Imperial Pints.	Litres.
4 Gills	=	1 Pint	= ·833111 =	·47312
2 Pints	=	1 Quart	= 1·66²2 =	·94625
			Imperial Gallons.	
4 Quarts	=	1 Gallon	= ·833111 =	3·785
10 Gallons	=	1 Anker	= 8·33111 =	37·85
18 Gallons	=	1 Rundlet	= 14·9959 =	68·13
				Hectolitres.
42 Gallons	=	1 Tierce	= 34·9906 =	1·5897
1½ Tierce or 63 Gallons	=	1 Hogshead	= 52·485 =	2·38455
1½ Hogsheads or 84 Gallons	=	1 Puncheon	= 69·981 =	3·1794
4 Hogsheads	=	1 Pipe, Butt, or Puncheon	= 104·971 =	4·7691
2 Pipes	=	1 Tun	= 209·943 =	9·5382

(2) BEER MEASURES.

Sub-divisions.	*Systematic name.*	*English value.*	*Metric value.*
		Imperial Pints.	Litres.
4 Gills	= 1 Pint	= 1·017045	= ·5776
		Imperial Quart.	
2 Pints	= 1 Quart	= 1·017045	= 1·1552
		Imperial Gallons.	
4 Quarts	= 1 Gallon	= 1·017045	= 4·6209
9 Gallons	= 1 Firkin	= 9·153405	= 41·5881
2 Firkins	= 1 Kilderkin	= 18·30681	= 83·1762
			Hectolitres.
2 Kilderkins	= 1 Barrel	= 36·61362	= 1·663524
8 Kilderkins	= 1 Hogshead	= 54·92043	= 2·495286
2 Hogsheads	= 1 Butt	= 109·84086	= 4·990572
2 Butts	= 1 Tun	= 219·68172	= 9·981144

WEIGHTS.

The weights are the same as those of Great Britain (see p. 49); but articles formerly sold by the hundredweight (cwt.) are now almost always sold by the *Quintal* or *Centner* of 100 lbs. av. English.

The Barrel of Flour contains 196 lbs. av.; the Barrel of Indian Corn, 178½ lbs. av.; the Barrel of Pickled Beef or Pork, 200 lbs. av.; and the Hogshead of Indian Meal, 800 lbs. av.

The measures of *Length*, *Distance*, *Surface*, and *Solidity*, are the same as those of Great Britain. The measures of *Capacity* are (*a*) *dry goods*:—The Dast of 2 Weys, each of 5 Quarters, each of 2 Coombs, each of 4 Bushels, each of 4 Pecks, each of 2 Gallons, each of 4 Quarts, each of 2 Pints. The Gallon = ·969447 British imperial gallon; the Bushel = ·960447 British imperial bushel, and the other measures in like proportion. (*b*) *Liquids*.—The old English wine gallon of 2 Quarts, each of 2 Pints = ·833111 of a British imperial gallon. *Weights*.—The weights are the same as those of Great Britain, but articles formerly sold by the *cwt.*, are now almost always sold by the Centner or Quintal of 100 lb.

MEXICO.

The weights and measures are the same as those of Spain. 108 Varas = 100 British imperial yards. The Carga, of 12 Fanegas, each of 12 Almudas; the Quintal of 100 libras = 104 lbs. Av. English.

WEST INDIES, BRITISH.

The weights and measures of Length are the same as those of Great Britain, and the measures of Capacity are the old Winchester Bushel, and wine gallon with their subdivisions, but the Imperial gallon and bushel are now also used.

BRAZIL.

(SAME AS PORTUGAL.)

BUENOS AYRES AND THE ARGENTINE CONFEDERATION.

The Standard Weights and Measures are those of the metric system recently introduced, but not yet come into general use. The weights and measures previously used were the Castilian of the Spanish system (see Spain), with some slight variations in name and value, as follows:—*Length.*—Pie of 12 Pulgadas, each of 12 Linies = 11·3652 English inches = 1·03713 old Castilian foot = ·28866 Mètre; Vara of Pies = ·86598 Mètre = 2·8413 English feet = 1·03713 Castilian Vara, Braza = 6 Pies = 5·6826 English feet. The English yard is also often used. Cudra = 150 Varas = 142·065 English yards; Legua = 40 Cuadra = 5·196 Kilomètres = 3·2287 English miles. *Surface.*—Cuadra Cuadrada of 22,500 square Varas; the Suerta de Estancia of 27,000 square Varas = 5·004 English acres; the Suerta de Chacra* of 10,000 square Varas, the square Legua of 900,000 Cuadra Cuadradas = about 176 English acres. *Capacity* (*a*) *dry goods.*—Fanega of 4 Cuartillas or 9,856 cubic Pulgadas = 2·50365 old Castilian Fanegas = 137·2 Litres = 3·77764 British imperial bushels; last of 2 Toneladas, or 4 Cahices, or 15 Fanegas = 7·07945 British imperial quarters. (*b*) *Liquids.*—Pipa of 6 Bariles, of 4 Canecas, of 8 Frascos, of 2 Medios of 2 Cuartos, of 2 Ochavos = 100·36368 British imperial gallons. *Weights.*—Libra of 16 Onzas, of 16 Adarmes, of 36 Granos = 1·01247 lb. av. English, or ·99833 old Castilian Libra. For gold and silver the Marco of 8 Onzas. Assayers divided the Marco for gold into 24 Quilates, each of 4 Granos, and each Grano of 8 Partes; and for silver into 12 Dineros, each of 24 Granos. The Maoco = 299·684 French grammes, or 3544·525 grains Troy. The apothecaries' Libra, which was ⅔ of the ordinary Libra, and was equal to 344·5254 grammes, was divided into 12 Onzas, each Onza into 8 Drachmas, each Drachma into 3 Escrupulos, each Escrupulo into 2 Ovalos, and each Ovalo into 12 Granos.

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* There were three varieties of the Suerta de Chacra, that of 10,000 that of 19,600, and that of 25,000 square Varas; the first for cultivated land in the country, the second for cultivated land near towns, and the third for waste land in the prairies.

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